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HINTS

TO

GENTLEMEN

OF

LANDED PROPERTY.

To which are now first added,

SUPPLEMENTARY HINTS.

By NATHANIEL KENT, K

OF FULHAM.

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ADVERTISEMENT.

THE Reader is cautioned not to expect any thing ſyſtematical in the ſubſtance, or ſtyle of the following Remarks. They are ſimply ſuch as have ariſen in the courſe of a three years reſidence, and obſervation in the Auſtrian Netherlands, and an extenſive practice ſince in the ſuperintendance, and care of ſeveral large eſtates, in different parts of England. Nothing is borrowed from books, or built upon hearſay-authority; what little they contain is, chiefly a deſcription of ſuch practical points of Huſbandry as may be adopted in many parts of England to great advantage. And as theſe Hints are publiſhed from no motive of intereſt whatever, but merely to enable gentlemen of landed property to be competent judges whether their eſtates are properly managed, or not, it is hoped they will meet with a candid and favourable reception.

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HINTS,

HINTS, &c.

INTRODUCTION.

MOST of the publications upon Huſbandry, which the preſs hath lately teemed with, ſeem to be read more for amuſement than profit; very few, if any, of the ſchemes recommended have been carried into general practice; which ſhews that agriculture is very little attended to as a ſcience. The intelligent farmer will always know and gather more from practice, and obſervation, than he can acquire from books and ſtudy. It is upon this principle that I have avoided all theoretical rules; for if we conſult only the book of Nature, and obſerve her order, and the conſequences that reſult from her prognoſtics, we ſhall derive infinite advantage from her inſtructions in all country-buſineſs, ſince no voice is ſo loud, or diſtinct as her's. Every plant, and weed, characterizes the ſoil it grows upon, and tells us its quality and value. A thouſand animals and inſects foretel us what weather, what ſeaſons, we are to expect; and are therefore highly deſerving of our attention. The late ingenious Mr. *Stillingfleet*, among other publications of great moment, favoured the world with a regiſter of the times of the budding, bloſſoming, and foliage of different flowers, ſhrubs, and trees, in different years, under the title of "*The Calendar of Flora*," and recommended it to all gardeners, farmers, and planters, to conſult theſe appearances at all times, and to be guided more by them in cropping and treating their land, than by the regular return of the months and years. Many people have obſerved, that when ants wander careleſly from the ſeat of their republic, in the ſpring of the year, a drought almoſt invariably enſues; but when they daub and plaiſter the ſides of their habitation, and confine themſelves nearer home, a very dripping, wet ſummer is known to follow. Swallows flying low, occaſioned by the weight of the atmoſphere preſſing down their prey, denote ſpeedy rain. In a drizzly morning, when the whole village is in doubt, whether it will be a thorough wet day, or clear up before noon, the ſheep will often tell them. If a continued rain be to enſue, they generally feed, notwithſtanding the moiſture, with great eagerneſs; knowing that they ſhall have no better weather for that day. If they deſiſt from eating, herd together in detached parties, and creep under the hedges, it is an indication that they know the rain will be over ſoon enough to afford them time to fill their bellies. It is needleſs to enumerate the advantages, to be derived from many more of theſe inſtructive agents; I mention theſe few, in order to inſinuate, that the great ſtudy and ſucceſs of agriculture, the moſt uſeful of all ſciences, indeed the nurſe of them all, depends upon a cloſe inveſtigation of nature; that the true ſecret, or myſtery, of aſcertaining the value of land, and knowing what plants are ſuitable, and appoſite, to particular ſoils, muſt be obtained by conſulting her *; which reduces all our profitable reſearches upon huſbandry merely to two points: Firſt, to find out, Whether our reſpective lands are properly applied to the uſe for which nature deſigned them? and next, Whether we practiſe the beſt methods of art

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* Mr. *Black* of Latton, in Eſſex, one of the beſt judges of the nature, and value, of land, who practiſes as a ſurveyor, has ſtrictly conformed himſelf to this idea; and the deſerved reputation which he has acquired, is the beſt proof that can be given, of his having taken a ſure guide.

which have been hitherto adopted? In making this enquiry, it will appear that great abſurdities are frequently practiſed in the miſapplication of crops, or in an improper ſucceſſion of them; and it will be equally apparent, that the beſt methods of art are far from centering all in one ſpot. Every county ſeems to abound in excellencies, and defects: but as every farmer thinks his very worſt cuſtom preferable to the beſt, which another county makes uſe of, there can be no hope of ſeeing the beſt adopted, and brought into general practice, and the worſt wholly exploded, but by the intervention and example of gentlemen of property; who may perhaps be able, by time, and perſeverance, in a great meaſure, to effect ſo deſirable an alteration. Many, and various, are the good, and bad, practices I allude to; and 'tis not the taſk of any one man to ſeparate them; but many hints from different people, if they are grounded upon ſound experience, may, in time, form a complete ſyſtem of practical huſbandry. According to this idea, I have always conceived the *Muſeum Ruſticum,* to be one of the moſt uſeful modern productions; becauſe well-meaning men have thrown in their reſpective mites of inſtruction, as far as their knowledge extended, without pretending to more.—Upon this plan, I ſhall venture to publiſh a few thoughts, upon ſuch matters as have particularly fallen under my own obſervation.

INCITEMENT TO THE STUDY OF AGRICULTURE.

A Competent knowledge of Agriculture is the moſt uſeful ſcience a gentleman can attain; it is the nobleſt amuſement the mind can employ itſelf in, and tends, at the ſame time, to the increaſe of private property, and public benefit. Nor is this ſtudy, ſo neceſſary, and ſerviceable to mankind, attended with much difficulty, or labour; but is even entertaining in the acquiſition: for its chief inſtructions are to be found in the pleaſant and open fields, and not in the confined library. To gentlemen whoſe property is realized in land, this object is more particularly important. Indeed to them it becomes a duty, which they owe not only to themſelves, but to the community; as it behoves every man to make the moſt of his property, by every laudable means; and as the Public is likewiſe intereſted in the produce of the earth, which the landholder has greatly in his power to increaſe, or diminiſh, by good, or bad management.

Gentlemen, who turn their thoughts into this channel, will never want employment; and may be aſſured of ſitting down from their labour with the moſt comfortable reflections; knowing that their own private fortunes are flouriſhing, at the ſame time that the mechanic, and labourer, receive advantage from their exertions.

But it has been very common to men of fortune, to aim at increaſing their property by purchaſes, which have, at beſt, paid them only three per cent., while they have neglected the moſt obvious improvements, upon old branches of their eſtate, which would have paid them in a much higher proportion. Inſtead of running into this error, it would be better to conſider, what particular advantages their eſtates derive from nature, and ſituation? and whether thoſe advantages are made the moſt of? whether the beſt modes of art are employed in cultivating them? and whether induſtry accompanies the whole? If there be any defect, the remedy is often eaſy, and the application is all that will be wanting.

APPLICATION OF SOIL TO ITS RIGHT USE.

NOthing can be more abſurd, than to attempt raiſing particular crops, upon land where the ſoil is naturally ill calculated for their production. To find out what corn, graſs, or plants, are moſt ſuitable, and appoſite, to the ground that is to be ſown, or planted, is the niceſt part of a farmer's buſineſs; and for want of proper attention to this main object, ill ſucceſs, and failure, is frequently the conſequence. For where an intelligent farmer would thrive, and grow rich, a blundering, inconſiderate man will quickly reduce himſelf to ruin.

There are rich loams, and mixed ſoils, of various complexions, which are kind, and favourable to the growth of moſt branches of the vegetable kingdom. Here little ſkill is required. The value of theſe will be eaſily found out, by growing on them whatever finds the readieſt, and quickeſt, way to market. But there is a much greater number of ſoils, whoſe nature muſt be ſtudied, before any great advantage can be derived from them; and as they are frequently blended together, and in colour, and appearance, much alike, tho' very different in their quality, it is extremely difficult to deſcribe them ſufficiently in writing. Their temper, as I have hinted in my introduction, is beſt found out by their own natural produce; by the ſamples of graſſes, and weeds, which are always to be found on the borders, and ſkirts of the fields, which always characterize them truly. This makes it eſſentially neceſſary, that every man ſhould ſtudy, at leaſt, the nature of all natural graſſes, wild plants, and weeds, before he can preſume to be a general judge of the quality, and value of land.

Every day's experience convinces me of the importance of this ſtudy, and the advantages which agriculture would receive, from ſarmers paying more attention than they do, to plants which characterize the ſoil. The colour, or complexion, of land, does not afford us ſo much information, as it's ſpontaneous produce.—It has been long remarked, that black, and white, thorns, where they grow vigorouſly, denote good land; and that malloes, and groundſel, are ſeldom found, in a healthy ſtate, but where land is naturally rich, or artificially made ſo. On the contrary, birch, broom, and juniper, where they appear without invitation, indicate poor land.—I may add, that yarrow, and the ſtrong black thiſtle, beſpeak good land, but moſt other thiſtles are dumb as to its quality.—I may venture likewiſe to aſſert, that maiden hair graſs, wild carrot, horſe mint, wild thyme, birds-foot, trefoil, and ſometimes burnet, are ſigns of poor land.—Teaſels, ſorrel, and the tufted hair-graſs, generally grow on cold ſtrong land, and the weed which farmers call woad-wick, on neglected paſture.—The creſted dog-tail, and vernal graſs, are certain ſigns of ſound land. Wild tanſey, and arſe-ſmart, are ſymptoms of an occaſionally-wet ſoil; for they ſpring up, after the water is off, as it were to ſay, that water has been there in a confined ſtate, not to improve, but to injure it.—On the contrary, the meadow fox-tail, and marſh-bent graſſes follow water, to denote, that the water, which had been there, did good.—Ruſhes never exiſt but upon wet land; and where the ſmall, black, fluted, ruſh is moſt found, the land will beſt anſwer the expence of draining.—The bright, long, ſmooth, pithy ruſh, uſed by chandlers, is not ſo certain a ſign, that land will anſwer improvement by draining. Colts-foot ſeldom appears but on ſpringy land. Docks are of ſeveral ſorts—The broad-leaved dock, or bur-dock, is rather a good indication—The water-dock, which is brought by occaſional floods, is, in general, mute as to the nature of land.—Theſe, and all ſimilar appearances, ſhould, however, be conſidered in a general way, and weighed with ingenuity; becauſe, after the beſt diſtinctions that can be made, it will frequently happen, that ſome of the good indications will appear on bad land, and ſome of the bad ſigns on good land; as even the general rules of nature are not without their exceptions. But this may be depended upon, that in the former caſe, the good ſymptoms will appear languid, and weak; in the latter, the bad will appear groſs, and florid; by a due obſervance of which difference, a pretty juſt idea may be formed, of the quality of the land.—Dr. Hill takes notice, that common ragwort "is a weed too frequent in our paſtures; covering a great "deal of ground to ill purpoſe, as no "cattle touch it." Horſes, and cows, indeed refuſe it; but I have taken notice, that ſheep are rather fond of it; and ſeldom leave any part of it, where they are much kept. Hence I infer, that the beſt, and the cheapeſt way to weaken, and keep this weed under, is to feed ſuch paſtures, as are apt to produce it, more with ſheep, than with other ſorts of cattle;—at leaſt it muſt be quite proper to graze ſuch land occaſionally with ſheep. Where ſheep cannot be kept, this weed ſhould be drawn out of the ground, at any expence; as it is a mere incumbrance before horſes, and cows, and has, beſides, a very ſlovenly appearance.—It is thus deſcribed; "The leaves "ſeem cut, or rather gnawn, to rags;— "the ſtalk is two feet high, firm, up- "right, and of a coarſe green, often "ſtained with brown, or red; the "leaves of a dark, coarſe green, and "ſmooth, and of an unpleaſant ſmell;— "the flowers numerous, and yellow, and "blow in June, July, and Auguſt."

The convolvulus, or bind-weed, which is very deſtructive to corn, by twiſting itſelf round the ſtems, taking from it's nouriſhment, and pulling it down after rain, is ſeldom got rid of by ploughing; becauſe it ſtrikes it's roots ſo deep (ſome ſay ten, or twelve, feet) that there is nothing can reach it ſo as to extirpate it. —This is a very pernicious weed, as it often cauſes a deduction in the crop, equal to the value of its tythe. Hoeing, and the bite of ſheep, are the beſt remedies againſt this grievance, as both tend to weaken, and check it.

Upon ſandy, and ſome other light, land, there is a ſmall, weak weed, with little round pods at the points, which contain the ſeed, which is about the ſize of a vetch:—it runs in knots, about an inch apart; the ſtem, at bottom, is not bigger than a ſmall ſtraw, and, from almoſt every joint, it acquires an additional branch; grows about a foot high, and has a yellowiſh-green caſt.—I do not know the Botanical name for this weed, but it is called by farmers pick-purſe — it is an exhauſting weed, and very common, where this ſort of land has not been chalked, or marled; but when this improvement is made, it ſeldom troubles the farmer afterwards.

If all the common plants were examined in this manner, as far as they are deſcriptive of the quality, and condition, of land, much real advantage might be derived to ſociety; and I ſhall think myſelf particularly happy, if this hint ſhould encourage any ingenious perſon, to carry it farther than my time, or ability, will enable me.—Theſe few obſervations, are meant only to ſhew the nature of the plan, I wiſh to ſee adopted; and they (with a very few exceptions) may be depended upon, or I ſhould have been cautious of offering them to the Public.

Some ſoils are, however, ſo diſtinct in their nature, as to be eaſily deſcribed.

I ſhall firſt mention blue clays, and coheſive loams, which are by nature evidently deſigned for graſs; and if well laid down,

and

and properly managed, are generally ſound to be ſome of our moſt valuable paſtures.

The red, and black, clays, if they be not too tenacious, are in general well calculated for wheat, oats, and beans; but require good culture. If their depth be conſiderable, oak likewiſe flouriſhes well upon them, which is alſo found to be of the beſt quality.

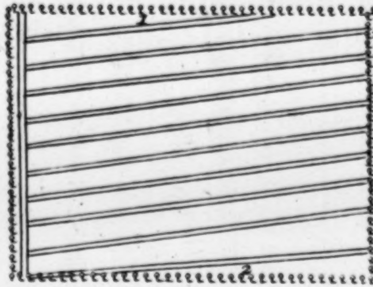
Sands, of all kinds, and light ſoils, of every degree, are calculated for the turnip-huſbandry, barley, and artificial graſſes.

Thin-ſkinned, chalky, land is clearly adapted to the growth of beech; which thrives prodigiouſly, when nothing elſe will grow upon it. But tho' this be a fact beyond contradiction, many extenſive tracts of high land remain naked, and unprofitable, which, by proper planting, would become uſeful, and highly ornamental.

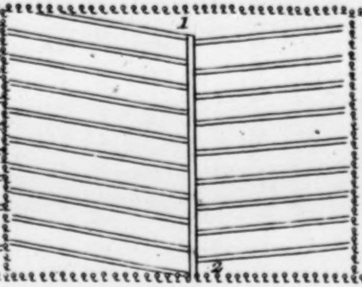
Chalk, of greater depth, is good for St. Foin; as well as ſome ſorts of gravelly-land.

Woodcock-ſoil generally conſiſts of yel-

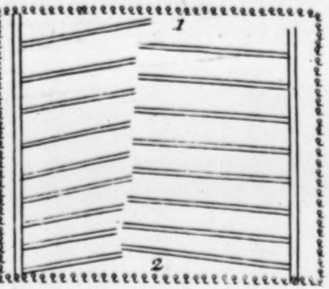
N°1.



A Field Drained
by one of its Ditches,
instead of a principal
Drain.



A Field Drained
by a Master Drain,
in the Middle, being
lower in that part
than at the Sides.



A Field Drained
by two outside Master
Drains, being higher
in the Middle, than on
the Sides.

Note, The Main Descent of the Land, is supposed to be from the Figures 1. to 2.

BRITISH MUSEUM

low, or white, clay, with a mixture of gravel; is ſeldom fruitful, and, beſides it's ſtanding in need of draining, is very unkind, and difficult to work; and therefore better devoted to paſture.

All land, of every kind, which is ſo diſpoſed, in ſituation, as to admit of flooding, either by rivers, brooks, roads, or yards, ſhould be turned into meadow-ground.

Boggy lands, which lie low, and cannot be drained effectually, without being ſcarified, ſhould be planted with black poplar, alder, and withe. Little angles, and odd nooks, near running rivers, ſhould be turned into ozier-beds, or planted with white poplar.

Barren, heathy-lands may be profitably planted with Scotch firs, and wild cherry-trees.

Aſh, one of our moſt uſeful, and profitable trees, which has every farmer for its enemy, becauſe it obſtructs his plough, and is noxious to other woods, as well as corn, ſhould be planted in angles, and by-places.

Elm, as it grows erect, and oak, as it receives its principal nouriſhment from a taproot, will do beſt in hedge-rows. But more of this under the article of TIMBER.

DRAINING.

DRaining is the firſt improvement which wet lands can receive; for till the land be laid dry, 'tis in vain to beſtow any kind of manure upon it; becauſe it ſoon waſhes away, and the ruſh takes poſſeſſion of it entirely. In ploughed land, where the ſoil is naturally wet, different remedies have been attempted. In the famous vale of *Eveſham*, in *Worceſterſhire*, the land is thrown into ridges, from ten to thirty yards wide, and raiſed in the middle, to an elevation of, at leaſt, a yard above the level, which is attended with great loſs, and inconvenience. The furrows very often contain water three yards wide. The headlands are thrown up in the ſame manner, which dams up the water in the furrows, ſo that it cannot get off, but rots the ſeed, and deſtroys the crop. When the ſeaſon is remarkably dry, another diſadvantage reſults from this awkward method. The tops of the ridges, if the ſoil partake at all of gravel, are ſure to burn. Both which diſadvantages are brought on, by the extreme the occupiers of thoſe lands have run into, of increaſing the convexity of the ridge from time to time. Beſides the real loſs they ſuſtain, it muſt be a great inconvenience, to occupy land in this manner, which nothing but uſe can reconcile. This, of all methods of draining, may ſafely be called the worſt; and it is to be lamented that no other can now be ſuggeſted, in this, or any ſimilar caſe, ſince it would not anſwer, by any means, to throw the ground into any other form, as the labour would be immenſe; and the manure, which has been laid upon it for centuries back, muſt in that caſe be buried, and a poorer ſoil brought upon the ſurface. It is therefore to be wiſhed, that no ſimilar practice may be introduced, upon a like ſoil, in any part of England.

Another mode of draining ploughed land is, by throwing it into very ſmall ridges of two, ſometimes four, or ſix furrows only; and provided the ground be ploughed in ſuch a manner, as to give the furrows a free diſcharge, this is by no means a bad practice; becauſe it takes off all ſurface water, and the land is not more difficult to occupy, and may be thrown again into any other form at pleaſure.

But the moſt effectual way of draining ploughed ground, is that practiſed in Eſſex; where the farmers have the merit of laying land, which is naturally full of ſprings, entirely dry; and of obtaining great crops where no corn would otherwiſe vegetate. The common way is, to have a principal drain, ſix or ſeven inches deeper than the ordinary drains, for the latter to empty themſelves into. There is no general rule, with reſpect to the proportion of ground which theſe maſter-drains will ſerve. Sometimes one is ſufficient for ten acres; but in this caſe the land muſt lay all one way, and the ſoil muſt be tenacious in its nature. When the deſcent lies different ways, there muſt be a principal drain to every ſlope. But where there is a good diſcharge into a ditch, which has likewiſe a good outfall, many people prefer it to a maſter-drain, becauſe any obſtructions which may happen, are more eaſily remedied; for when a ſingle drain is choaked up, the place is eaſily found out; but when many drains are connected together, it is often difficult to find out the defect. And ſometimes the burrowing of a mole will occaſion a ſtoppage.

The method of opening the principal drains is, to plough four furrows, throwing two each way; the two inſide furrows being ploughed deeper than the others. After the plough, the earth is ſunk a ſpit deep with a common ſpade, and afterwards another ſpit with a land-ditching-ſpade, called a griping-ſpade. Laſt of all a ſcoop is made uſe of, to rake out all the looſe earth. This drain when completed is about two feet deep. The common drains are begun, and finiſhed, like the principal drains; but the ſpit with the common ſpade is omitted; and therefore they are not above eighteen inches deep, two and a half wide at bottom, and three and a half at the top of the grip. In this proportion, the narrower they are, the better. The drain is filled up as high as the top of the ſpade-work, with bruſh-wood at the bottom, and a piece of wood, as big as a man's leg, on the top; a little ſtraw is ſhaken over that, and the remainder of the drain is filled up with earth. The greater the proportion of wood, and the harder the earth is preſſed in, the longer will be the duration of the work. The wood muſt be ſuch as runs pretty free in its branches. Elm, alder, and ſallows are as good as any.

It is rather difficult, to make an exact eſtimate of the expence, becauſe the price varies, in the county of Eſſex itſelf, from one penny to three pence per pole, in the workmanſhip only; and ſome land requires the drains to be nearer together than others; but ſuppoſing the drains to be a pole in width from each other, which is the common diſtance, the following calculation, upon an average, will be pretty exact for an acre:

	l.	s.	d.
Sinking the ditch to obtain an outfall -	0	7	6
Drawing the furrows - - -	0	2	6
160 poles of digging and filling up, at 2 *d.*	1	6	8
Wood, eſtimated at a faggot of twelve feet long to a pole, carriage included, at 4*d.* per faggot - - -	2	13	4
Half a load of ſtraw, and carriage - -	0	7	0
Extra-digging, in the ends, where the plough will not reach - -	0	1	6
	£. 4	18	6

This improvement varies according to the ſoil. Upon an abſolute ſand it will indeed barely anſwer. Upon a gravel, which is the ſoil where ſprings moſt abound, or upon a mixture of loam and gravel, it will laſt from five to twelve years. Upon a clay, or ſtiff coheſive ſoil, it will laſt twenty.

But even in the former caſe, it is apparent that it will anſwer the expence, as it is done in general by the rack-tenants in that county, and very frequently by tenants at will.

This kind of draining, where it can be practiſed, is the neateſt and beſt; but it would be certainly an improvement, if the depth of the drains were varied, according to the bed of the ſprings. One univerſal principle, in this mode of draining, muſt be attended to; which is, to get a good outfall, or diſcharge, and to draw all the drains obliquely, acroſs the deſcent of the ground, not right down with, nor right acroſs the fall. The advantage is obvious; for if a ſpring riſes in any part of the ground, it cannot, in this caſe, have far to run, before it finds the means of getting off; but if the drains were drawn right down with the deſcent, it might ooze down, parallel with the drain, for a furlong in length before it would get into it, though it were only at the diſtance of ten yards from it. And, on the other hand, if the drains were drawn acroſs the deſcent, upon right angles, and a dead level, they would of courſe remain full, for want of a free diſcharge, and not have their proper effect. A little fall muſt be allowed; but the leſs the fall, the greater will be the duration; as the drains will not ſo ſoon choak up, by the waſhing in of the ſoil. This method of draining ſeems to be the moſt excellent upon ſpringy land. I ſubjoin a ſketch of the uſual way of opening theſe drains, marked N°. 1.

There is a method of covered-draining, with ſtones, practiſed in ſome parts of *Somerſetſhire*, and *Wiltſhire*, which is very expenſive compared with that in *Eſſex*, but then its duration is much longer; for when it is well executed, the farmers think it completed for ever. Lord *Weymouth*'s extenſive park, at Longleat, has been drained in this manner, at an immenſe expence, ſtones being very ſcarce near him. The expence of theſe drains, in workmanſhip, is from ſix pence to ſeven pence a pole; in Eſſex it ſcarce bears half that price. I ſhould prefer either of theſe methods according to the eaſe with which the materials are obtained.

There is ſtill another ſort of covered draining, which may be adopted in a very ſtiff, tenacious ſoil. It is called turf-draining; and, beſides that it is the cheapeſt of all, I believe it to be as laſting as any, if the land be ſufficiently coheſive: But upon a looſe, crumbling ſoil it is impracticable. This draining is of two kinds; in the one, the inverted turf is put upon a ſhoulder, as deſcribed N°. 2, leaving a hollow part under it, and the remainder of the drain is filled up, merely with the earth that came out of it. The other method is, to cut out a wedge, in the form of a Roman figure of Five, deſcribed N°. 3; and, when it is taken out, to cut off about ſix, or eight, inches of the bottom part of the wedge, and to put the remainder into the ſame place again. I believe, if a few ruſhes were put round the bottom of this wedge, ſo as to keep the lower part from dropping, and the ends of the ruſhes were drawn upwards, between the ſides of the drain and the wedge, it would be an improvement to this laſt method. Where either of theſe methods are made uſe of, care muſt be taken, to keep off all cattle till the drains have had time to ſettle.

But open drains are to be preferred to the Eſſex, or any other mode of covered draining, in all marſh and boggy land, and in ſandy ſoils, where the hollow drains are more liable to be choaked; and in meadows, where they ſerve for fences, as well as laying the land dry: but here the ſame rule ſhould be obſerved, to ſink them, as much as poſſible, in the before-mentioned oblique directions.

In flat countries, ſuch as *Norfolk*, and *Suffolk*, there is a ſort of bad meadow-land, which ſkirts the river, in a narrow form, and generally lies extremely wet, from the ſprings which iſſue out upon it, from page 33.

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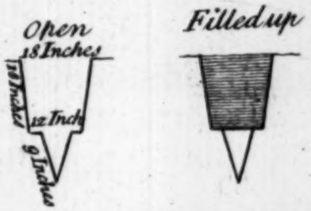
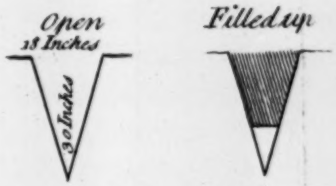
N°. 2.



N°. 3.



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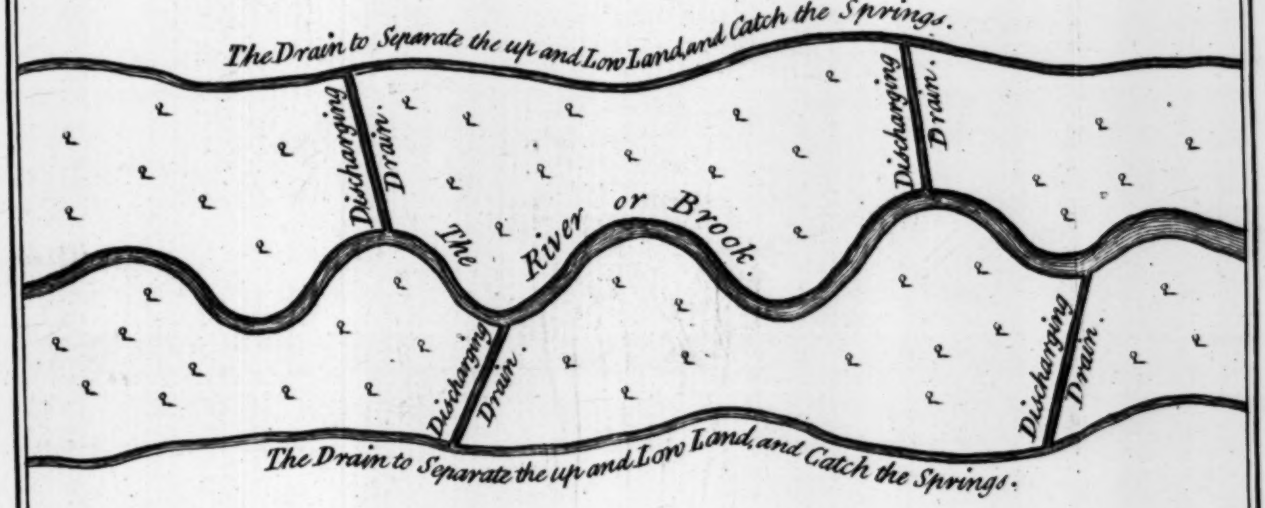
Sketch N°. 4.


The Drain to Separate the up and Low Land, and Catch the Springs.
Discharging Drain.
Discharging Drain.
The River or Brook.
Discharging Drain.
Discharging Drain.
The Drain to Separate the up and Low Land, and Catch the Springs.

J. Lodge sculp.

from the higher ground, on each ſide. In this caſe, open drains ſhould be ſunk, parallel with the river, on each ſide, between the up, and the low-land, juſt at the top of the places where ruſhes frequently ſhew themſelves. Theſe drains ſhould be ſunk ſufficiently deep, to catch all the ſprings, which the high grounds produce; and may be deeper, or ſhallower, as the ſprings lie. When theſe drains are charged to a certain height, they ſhould be eaſed by a ſmaller drain; which may be cut, occaſionally, right down with the deſcent; and communicate, as an outfall, with the river, according to the ſketch annexed, N°. 4. But it muſt be obſerved, that this laſt method of draining is merely contrived to guard the meadow land from the dripping of the higher ground, as it is ſeldom wet in itſelf; and this practice is by much the cheapeſt, and moſt effectual.

NATURAL GRASSES CONSIDERED.

MR. *Stillingfleet*, in his Obſervations upon Graſſes, has deſcribed a few of the beſt ſorts ſo clearly, that any perſon, who directs his attention to this uſeful ſtudy, may eaſily diſtinguiſh them.

Annual meadow-graſs is one of the moſt valuable: for though it does not run ſo long in the ſtem, as ſome other graſſes, it produces a vaſt deal of blade of a ſweet and nouriſhing quality; and is moſt to be deſired, of all graſſes, upon land that is chiefly uſed for paſture. Indeed upon this ſort of land it moſtly ſhews itſelf. Mr. *Stillingfleet* took notice, that a great deal of this graſs appeared, on a much frequented walk, on Malvern-Hill, tho' he could not find any of it, upon any other parts of the hill. This remark of his led me to ſtudy the particular nature of this graſs, more than I ſhould otherwiſe have done. And I am of opinion, that almoſt all land is impregnated with it's ſeed, and will of courſe produce it, though not in equal quantities. So that it does not ſeem neceſſary to ſow it, but merely to encourage it's growth. When the ſurface lies hollow, other graſſes, of a coarſer nature, and poſſeſſed of deeper roots, get the better of it, and are apt to ſtifle it. But when the ſame land becomes trodden, this graſs immediately ſhews itſelf; and, if the preſſure be frequently repeated, it very ſoon gets the advantage over moſt others, as may be ſeen at the entrance, and outſides, of moſt fields, where the feet of cattle give it, as it were, a new birth. So that as preſſure alone does the buſineſs, it ſeems a great argument in favour of ſeaſonable rolling, which is indiſputably a very fine improvement upon all meadow, and paſture, particularly upon light dry land. By this improvement the moiſture is more preſerved, and the earth, being preſſed cloſe to the roots of the graſs, preſerves it from burning. Thoſe who are againſt rolling aſſert, that the quantity is leſſened. In hay, I believe, it may ſometimes be the caſe; becauſe rolling, which fines the ſurface, and thickens the ſet of annual meadow-graſs, checks, and weakens, the long ſpungy graſſes, which frequently compoſe the bulk of the crop. But then the quality of the hay, after rolling, will be ſo ſuperior to what it would be without it, that two tons will be as good as three; and if the land be grazed afterwards, the advantage will be ſtill greater.

Some of the next beſt graſſes are, the *creſted dog-tail*, the *vernal*, the *ſheep's feſcque*, and the *fine bent*; which are all indications of ſound land. And the obſervation which is frequently made, that moſt common things are the beſt, is particularly verified in theſe graſſes; for they viſit us, in greater proportion than moſt others, and are equally excellent in hay, as in the green blade, which is of a fine nature. They are particularly wholeſome for all kinds of cattle; and, provided we attend to them properly, are much to be improved. Nothing is better for theſe graſſes than the ſediment of ponds; or, next to this, a generous compoſt made of three parts of good, freſh, maiden earth, or the ſcouring of ditches, and (if the ſoil be a clay, or ſtiff in its nature) the fourth part chalk, or lime. But if it be a ſandy, or a light ſoil, two parts of maiden earth, one other part clay, and a fourth part rotten dung, will be beſt. This compoſt, well mixed, ſhould be laid on before Lady-Day; be well worked into the ground with buſh-harrows, and repeated at leaſt every fifth year; which will not only be a very high improvement to theſe graſſes, but be the means of producing a great deal of white clover.

The *flote feſcque*, or *marſh bent*, another moſt valuable graſs, is found in moiſt lands; is to be improved beyond all others, and at a leſs expence, merely by flooding; which I ſhall endeavour to ſhew hereafter.

Mr. *Stillingfleet* was very earneſt, in adviſing huſbandmen to gather, and ſow, ſome of the beſt of theſe ſeeds in their ground, inſtead of filling it with the ſtale rubbiſh which they generally make uſe of. Great advantage might certainly be made of this hint, particularly when land is laid down for meadow, or paſture. In this caſe, the beſt graſſes cannot be collected at too great an expence; for I have ſeen a ſmall ſpot of land, in the middle of a large piece, which was laid down, twelve or fourteen years ſince, by Mr. *Stillingfleet*, upon the eſtate of Mr. *Price*, of *Foxley* in *Herefordſhire*, with ſome choice ſeeds, at the ſame time when the remainder of the field was laid down with common ſeeds; and this ſpot is conſiderably better than the reſt. It not only appeared ſo to my judgement, but was allowed to be ſo by Mr. Price's bailiff, who was well acquainted with its produce.

From Mr. *Stillingfleet*'s experiment, and my own obſervations, I am clearly of opinion, that any perſon who has land, calculated for graſs, may improve it, by this method of laying it down, to a much greater degree than he can in the uſual way. But as he may be at a loſs ſometimes, to diſtinguiſh the graſſes, and may not, at firſt, know which ſuit his ſoil beſt, I adviſe him to proceed in the following manner, *viz.* Let him clean a piece of land effectually, and ſow different natural graſſes, upon different ridges of the ſame piece. Let others, mixed, be ſown upon other ridges. Give every ſort the ſame attention, but, at the ſame time, let each have variety of management; which may eaſily be done, by ſetting two or three lines of hurdles acroſs the ridges. One part of the whole may be fed, another part may be mowed, another part may be manured with different ſorts of manure. By this means, in two or three years, the nature of every graſs will be found out; and an intelligent farmer will ſoon know which to prefer for meadow, which for paſture, and which to reject.

The next beſt method of getting clean ſeed is, to hurdle off clean ſpots of ſheep-downs, which have been fed quite bare. This, tho' ſeldom practiſed, is a good way of coming at clean natural ſeeds.

ARTIFICIAL GRASSES CONSIDERED.

St. Foin.

THOUGH *St. Foin* be not ſo generally underſtood, nor ſo univerſally cultivated, as ſome other artificial graſſes, I ſhall venture to give it the preference to all others, not only for its hay, which exceeds in goodneſs every other ſort, but for the advantage of the after-graſs; which is particularly good, between Michaelmas and Chriſtmas, when the natural graſſes begin to decline. Nor is it leſs valuable on account of its duration, by which it ſupplies, in a great meaſure, the place of meadow, and paſture, in hilly countries, where there is a deficiency of ſuch herbage, or on ſoil where it cannot be obtained. It is truly a moſt uſeful and valuable graſs, and cannot be too highly eſteemed. In ſome parts of

Hampſhire, *Wiltſhire*, and *Berkſhire*, there are conſiderable tracts of land, ſown with *St. Foin*, which now let from twenty to thirty ſhillings an acre, which would not be worth above half that rent, in corn, or in any other mode of huſbandry.

The land proper for this graſs is, chalk, gravel, or almoſt any mixed mould, provided it be not wet, and that it has a rocky, or hard, bottom, to check the root, at about a foot, or fifteen inches, depth; otherwiſe it will ſpend itſelf below the ſurface. This therefore may be conſidered as a general rule—that *St. Foin* ſhould never be planted where there is a great depth of ſoil.

The ground cannot be made too clean, before it be ſown; ſo that it generally ſucceeds beſt after turnips; and, as well as moſt other graſſes, is better ſown with about half the quantity of barley, which is uſually ſown for a full crop, than by itſelf. For the barley will ſhade, and keep it moiſt, during the firſt ſummer; and, at the ſame time, not injure it, as the crop will be lighter than ordinary. About four buſhels of *St. Foin-ſeed* is enough to an acre; and as the ſeed is large and coarſe, it ought to be completely buried; and therefore 'tis beſt to plough it in with a very ſhallow furrow. The firſt autumn it ought not to be fed at all. Every ſucceeding ſummer it may be mowed for a crop; and the ſecond autumn it may be fed, with any cattle, except ſheep, till Chriſtmas, but not cloſe. Every autumn afterwards it may be fed with ſheep, as well as other cattle, and may be fed as cloſe as they can bite, provided it be laid up by the middle of January.

The ſecond winter after ſowing, it ſhould be manured with peat-aſhes, if they can be had at any reaſonable rate; otherwiſe, with any other aſhes, which are the beſt manure for this graſs. And if this dreſſing can be repeated every third year, the *St. Foin*, if it happen to take good root, will laſt ſixteen, or eighteen, years; and when the land is broken up again, it will be conſiderably improved by the roots, which the ground will be full of. It does not attain its perfection till about the third year; and about the tenth it will begin to decline, unleſs greatly aſſiſted by manure.

Clover.

Clover may be eſteemed, from its excellent quality, great produce, and meliorating root, which is a great improver of land, the ſecond artificial graſs in point of value. It is now in ſuch general uſe, that it ſeems almoſt needleſs to deſcribe the manner of cultivating it; therefore it will be ſufficient to obſerve, that the beſt way is to ſow it on clean land, with a full crop of barley, after turnips, at the rate of twelve pounds to an acre. The duration of this graſs is, however, very ſhort, except on freſh land; which points out the neceſſity of keeping off its ſucceſſion, longer than the common cuſtom, by intermixing with it as great a variety of other crops, as may be ſuitable.

If it had not been for this defect, I ſhould have been inclined to have given it the preference, even to *St. Foin.* But on land where it has been often repeated, it ſeldom will continue above two years; and, very often, not above one; and though manure will increaſe its crop, it will not prolong its ſtay. This graſs evidently grows kindeſt after turnips; and any ſoil which will bear them, is ſuitable for it. The uſual way is, to mow it in June, and make it into hay. Two tons upon an acre may be reckoned a medium-crop. As its quality is nouriſhing, it is particularly good for all draft horſes, oxen, fatting, and milch cattle; but not ſo much reſpected for ſaddle-horſes. Sometimes it is mowed a ſecond time, late in the month of Auguſt; but the hay of this ſecond crop is leſs in quantity, and of an inferior quality to the former; and therefore, if the farmer be not in any great want of hay, he will do well to feed it, inſtead of mowing it a ſecond time.

When it is ſaved for ſeed, the cuſtom is, to feed it down cloſe until the latter end of May, and no longer; which early feed is a vaſt advantage for ewes, lambs, and other cattle, as it comes in before the natural graſſes.

Theſe are the common advantages derived from this graſs; but a much greater benefit may be obtained, by cutting it green, as often as it attains a ſufficient growth, and carrying it into ſtables, and yards, to be eaten, by different cattle, out of racks and cribs. In this manner, it will certainly ſupport more than twice the ſtock it would do if fed off upon the ground, where it grew; beſides the additional quantity of manure that will, by this method, be made in the ſaid ſtables, and yards, if the ſame are kept littered with any ſort of ſtraw, or even ruſhes, or fern; which increaſe of manure will fully compenſate the farmer for his expence, in cutting, and bringing the clover into the yards. I have known this method uſed, in many parts of England, to very great advantage; and I apprehend the great difference may be accounted for as follows. The quick growth of this graſs, after mowing, ſhades the ground, and prevents the ſun from exhaling the moiſture of the land, ſo much as it would if fed bare; conſequently it continues to ſpring with more vigor; and the moment one crop is off, another begins to ſhoot up. Whereas when cattle feed it, they frequently deſtroy almoſt as much as they eat; and, beſides, bruiſe the necks of the roots with their feet, which prevents the clover from ſpringing, ſo freely as it does after a clean cut by the ſcythe. In hot weather, which is the common ſeaſon for feeding *clover*, the flies too are generally ſo troubleſome to the cattle, that they are continually running from hedge to hedge, to bruſh them off; by which it is inconceivable what injury they do to the crop. But when they are fed in ſtables, and yards, they are more in the ſhade; they thrive better; and, at the ſame time, conſume the whole of what is given them without waſte.

As it is almoſt a general practice, to ſow wheat after clover, and eſſentially neceſſary to manure for it, unleſs the clover has been manured the preceding year, it is greatly for the farmer's intereſt, and by much the beſt huſbandry, to manure the clover; for, by this means, he greatly augments his preſent crop, and the land will be in fine condition for a crop of wheat, without any farther aſſiſtance.

There is a ſpecies of *clover* called *cow-graſs*, which has been lately cultivated, in ſome parts of *Hampſhire*, with great ſucceſs. The ground reliſhes it extremely well, and it is by many farmers preferred to the *common clover*. It grows more floridly, and thrives better upon poor land. At firſt ſight they are not eaſily diſtinguiſhed; but, on a cloſe inſpection, the *cow-graſs* will be found of a darker green, and more pointed at the ends of the leaves; the ſtalk is of a cloſer texture, and not ſo porous as the common clover. Some people imagine this to be a native of this country; if ſo, it may be highly worth our attention.

Darnel, or Perennial Rye-Graſs,

Sometimes is uſed as an *artificial-graſs*, and is then ſown with clover, at the rate of a quarter of a peck to an acre. Sometimes it is ſown by itſelf, at the rate of two pecks to an acre; and, at other times, in the proportion of a gallon to an acre, with eight pounds of clean trefoil (exempt from the huſk). It comes earlier than moſt other graſſes, and all cattle are particularly fond of it in the ſpring of the year; but towards Midſummer the ſtalks become dry, and cattle then refuſe them; therefore, in all paſtures, this graſs ſhould be kept down, by being conſtantly fed. When mixed with clover, and mowed for hay, it may be ſpring-fed notwithſtanding, and is even the better for it; becauſe it would otherwiſe be ripe before the clover. When ſown with clover, its greateſt advantage is experienced in the ſecond and third years; for as the clover declines, this increaſes in proportion. When mixed with trefoil, it is a very good graſs upon light land, deſigned to continue ſeveral years in ſheep-paſtures.

LUCERN.

Lucern is a valuable graſs, but requires ſo much weeding, and attention, that it is not by any means calculated for large farms; but if cultivated upon a ſmall ſcale, it would prove highly ſerviceable in dairy-farms, or to any perſon who is obliged to keep horſes, and cows, and has but little land.

This graſs, like *St. Foin*, ought to be checked at a certain depth, or it will ſpend itſelf too much under ground; but inſtead of a foot, or fifteen inches ſtaple, it will require from eighteen inches to two feet, and the land ought to be tolerably good in quality.

The beſt way is, to ſow this ſeed in drills, at about two feet apart. The ground muſt be firſt made very clean, and the ſeed muſt not be buried above two inches deep. The firſt year it will require an infinite deal of labour in weeding, for it has an utter abhorrence of every other neighbour; but, when once it has got good root, two weedings in a ſeaſon will be ſufficient; which may be done by women, and children. But every time it is cut, it ought to be hoed; and thus treated (with a light coat of rotten muck every ſpring) it will laſt ten or twelve years, and bear cutting four times in the courſe of the ſummer. The beſt way is, to ſoil cattle with it green. It is very nouriſhing to horſes, and cauſes cows to give a great deal of milk.

TREFOIL.

Trefoil is a very uſeful graſs on poor land; for the cloſer it is fed, the more it will ſpread; and therefore it is highly uſeful in laying down land for ſheep-paſtures; but is not held in any eſteem for dairies, as it gives the butter a rank flavour. Nor is it calculated for mowing; for it produces but little after-graſs, and the hay is of a very critical nature; for, if it receives the leaſt injury by wet, the leaves mat together, and it becomes mouldy, and of very little value.

WHITE DUTCH CLOVER.

The *White Dutch Clover*, though laſt mentioned, is of the firſt conſequence. Nothing is ſo good for laying down lands for paſture, as this, mixed with other graſſes; nothing more ſweet, and nouriſhing for all kinds of cattle; and, when uſed as an artificial graſs, it is the beſt ſubſtitute for the *common clover* which can be made uſe of. But its good qualities are ſo well known, that it muſt be needleſs to add any thing more in its favour.

I purpoſely omit *Burnet*, as it does not ſeem to have had ſufficient trial, to diſcover what may be expected from it.

DIFFERENT METHODS OF IMPROVING MEADOW AND PASTURE-LAND.

MEADOW, and paſture-land, is oftener neglected than ploughed ground, notwithſtanding it generally admits of a much greater proportion of improvement.

The firſt, the moſt eaſy, and the greateſt of all improvements is made by flooding. In *Dorſetſhire* and *Hampſhire*, there are meadows which are increaſed, from ten ſhillings, to three pounds an acre, by bringing the water of the common river over them; which is eaſily effected by means of little trenches, or grips, which ſhoot the water on, and draw it off at pleaſure. Theſe meadows are particularly uſeful for the nouriſhment of ewes, and lambs, in the ſpring; and after they are eaten quite bare, ſo late as the latter end of April, will often produce, in ten weeks time, three tons of hay to an acre, without ever receiving any kind of manure, or any other attention, than the throwing them under water at proper ſeaſons; which deſtroys all weeds, and enriches the land to a very high degree. There are thouſands of acres, in many other counties, which might be equally improved. The temptation is certainly great enough, to put any one upon his mettle, to find where the thing is practicable, and to encourage him to adopt it. If the great difference between 10*s.* and 3*l.* an acre, in yearly value, ſtrike us, the difference between 15*l.* and 90*l.* in the fee ſimple of an acre of this land, will ſtill more ſtrongly affect us, though the proportion be the ſame.

There is another ſort of flooding, which is likewiſe very beneficial, and which may be eaſily adopted in all hilly countries; I mean that of throwing the ſcouring of hills, and roads, and the dripping of yards, over land. This is ſometimes done, and as much in *Herefordſhire* as in any other county;

but though the improvement be immenſe, the practice is by no means general. The advantage is often ſeen by the tenant, but unleſs he has a leaſe, he ſeldom avails himſelf of it; and ſometimes it is neglected through indolence. But whatever motives may keep the tenants, from availing themſelves of ſuch advantages, owners of land, and gentlemen's ſtewards, are unpardonable, in waving ſuch beneficial improvements.

Flooding is truly the beſt of all improvements, where it can be effected; and there ought not to be a ſingle acre of land neglected, which is capable of it. As rolling, and preſſure, bring the *annual meadow-graſs,* ſo flooding immediately begets the *flote feſcque,* or *marſh bent,* the richeſt of all graſſes; being equally bulky in quantity, and nouriſhing in quality. This is the graſs, that ſwims upon the tops of ponds; ſprings up where water has ſtood; and which cattle frequently plunge up to their bellies to reach. Horſes, and cows, are ravenouſly fond of it; and, according to Mr. *Stillingfleet*'s account, the blade is not only ſweet, but the ſeed, which it produces, is gathered, and eaten, by the common people in *Sweden*, as we eat millet.

There is a ſort of paſture, to be found in moſt counties, where land lies to a cold aſpect, which is very much inclined to moſs; which chokes up the graſs, and impoveriſhes the land. Penning ſheep upon it is one way of killing the moſs, and improving the paſture; and another good method is, to harrow it well with ſharp-tined harrows, in the ſpring of the year, and to manure it afterwards with any compoſt of a warm nature. After ſuch harrowing, it is a good practice to ſow *Dutch clover*.

There is another ſort of paſture, which produces little more than a ſharp, coarſe-bladed graſs, which the farmers call pink, or carnation-graſs; from the reſemblance the blade of this graſs bears, to the blades of theſe flowers. This is the ſame graſs, which grows in great tufts, or bunches, in coppices, and has but little nouriſhment in it. This land wants draining; and, when drained, ſhould have a great deal of ſtock kept upon it, by ſtrewing turnips before them, or foddering them with hay, to invite the *annual meadow-graſs* to ſpring.

Another ſort of paſture, in many parts of England, is overſpread with alders, and other ſcrubby wood, and buſhes; which, beſides carrying a very ſlovenly appearance, harbours wet; and the ſhade renders the turf ſour. This rubbiſh ſhould always be extirpated. Wood and graſs never do well together. If it be neceſſary to have wood of this ſort, it ſhould be raiſed in ſeparate plantations, in the manner I ſhall hereafter point out.

Another ſort of paſture ſtill is over-run with ant, and mole-hills; owing, at firſt, to neglect, in the occupier of the land. Such turf as this is generally old; ſometimes it is too bad to recover; but oftentimes, when the hills are laid, proves good land. There are two ways of curing this ground; the one is by croſſing and hollowing up the turf, ſcooping out the middle part, ſpreading it about, and laying the turf down again in the ſame place. This way is to be preferred, where the piece of land may be in view of an habitation, or under any ſimilar circumſtances. But the moſt effectual improvement is, doubtleſs, to pare them entirely off, to lay them in heaps to rot, which ſhould be mixed afterwards with a moderate quantity of lime, and then ſpread over the ſame piece of land from whence they came. As theſe ant-hills originated for want of rolling, it is almoſt needleſs to recommend rolling, as a complete finiſh to this improvement.

When meadows are very coarſe, whether naturally ſo, or occaſioned by ruſhes which grew on them, before they were properly drained, there is no better improvement for them, than ſtrewing twenty, or thirty, load of ſand to an acre over them. It tends greatly towards fining the ſurface, and generally begets a ſet of *white clover*.

The earth is ſo generous a parent, that we find all land repay us for our labour, and ſkill; but it will appear, on the ſlighteſt inveſtigation, that no land pays ſo well as meadow, and paſture. Where improvements upon ploughed land pay a crown, the other generally pay a guinea. Therefore when land is newly laid down in paſture, it ought to be well manured the third or fourth year, let the expence be ever ſo conſiderable, becauſe it will bring a good ſet of graſſes much ſooner than they would otherwiſe come; and double the land in value, for ſeven, or eight, years afterwards.

I ſhall cloſe this ſubject with adviſing all farmers to be careful, not to overſtock their paſture land; for when they do, they are great loſers by it. Land, when fed too bare, is apt to burn in ſummer, and to be chilled in winter. Beſides, the necks of the roots are ſo injured by very cloſe biting, that they do not afford ſo quick, or free a ſpring to the ſucceſſion of blade, as there would otherwiſe be. But, on the other hand, I do not adviſe the leaving a long ſet of graſs on the ground. The medium will agree beſt with all land; and be attended with moſt advantage to the occupier. And the more ſorts of cattle feed upon land, at different intervals, the better. Alternate mowing, and feeding, is likewiſe good. The one fines the turf, and the other enriches it.

THE GREAT ADVANTAGE OF A SUITABLE STOCK OF CATTLE.

NEXT to the judgment required, in adapting each ſoil, to the purpoſe for which nature intended it, the ſtocking of land with proper cattle, is one of the niceſt parts of the ſcience of farming. Where nature is left to herſelf, ſhe always produces animals ſuitable to her vegetation, from the ſmalleſt ſheep on the Welch mountains, to the largeſt ſort in the Lincolnſhire marſhes; from the little hardy bullock in the northern highlands, to the noble ox in the richeſt paſtures of Somerſetſhire. But good huſbandry admits of our increaſing the value of the one, in proportion to that of the other. Land improved enables us to keep a better ſort of ſtock; which ſhews the double return the earth makes for any judicious attention, or labour, we beſtow upon it. The true wiſdom of the occupier is beſt ſhewn, in preſerving a due equilibrium between this improvement of his land, and ſtock. They go hand in hand; and if he neglect the one, he cannot avail himſelf of the other,

We ſhould firſt conſider, what kind of cattle will anſwer our purpoſe beſt, in the cultivation of our ground; and next, what ſorts pay beſt in the conſumption of our produce.

Upon a light ſoil, where two horſes are ſufficient to manage a plough, or where, if more be employed, a quick motion is required, horſes will always be found moſt uſeful, and profitable; becauſe four horſes, on ſuch land, will cultivate as much ground as eight oxen. But where the ſoil conſiſts of a clay, or any heavy, ſtrong ground, ſuch as requires four horſes, and admits only of a ſlow motion, oxen will there have the advantage; and be in the proportion of twelve oxen only to eight horſes. In the former caſe, the oxen would be double in number, in the latter, they are only as three to two.

When this diſtinction is clearly made, each animal will be found to have his excellence; and every intelligent occupier of land will know which to prefer. The horſe is ſo delightful, ſo ſpirited, and pleaſant a ſervant, that one would wiſh to make choice of him upon every occaſion; but, when intereſt is thrown into the oppoſite ſcale, the ox will often deſerve the preference. For the great expence of ſupporting the horſe, his natural decreaſe in value, and proneneſs to accident, by which that value is totally loſt, are great drawbacks in his account; eſpecially when we conſider the more moderate charge of ſupporting the ox, and the profit which is made of him, even when he is paſt his labour. This is obvious; of theſe therefore I ſhall ſay no more; they are equally advantageous upon different ſoils, and neither ſpecies is wholly to be preferred, or wholly excluded.

Sheep may, next, be conſidered as one

of our moſt profitable animals. Three great advantages reſult from them to their maſter; their annual coats, their increaſe in value, or number, and the excellent manure which they beſtow on land. Indeed, upon all light ſoils, I might mention a fourth advantage reaped from them; ſince their treading is almoſt as great a benefit as their manure.

Many farmers have found great advantage, in buying ſheep from the pooreſt ſpots, as they generally thrive moſt when they come into a richer paſture; like trees, which endure tranſplanting, the better for coming from a poor nurſery. They likewiſe think, that they endure folding, and penning, better than ſheep which are bred on a more luxuriant ſoil. They are certainly right in theſe obſervations. And therefore this reaſon ſhould induce the occupiers of poor land, to let their artificial graſſes continue longer, before they are broken up, that they may be able to breed the more ſheep: in which they would alſo find their profit, and, at all times, a ready market for them.

With reſpect to the notion which farmers are apt to entertain, that all kinds of ſheep will not endure penning; I think they labour under an error. I rather believe that all lean, or ſtore-ſheep are the better for being folded. They are generally more healthy, as they take their ſuſtenance at regular intervals, and are kept from eating the wet graſs too early in the morning, which is generally allowed to be unwholeſome to them. In the moſt famous ſheep counties, *Dorſetſhire*, and *Wiltſhire*, penning, or folding is univerſal. And, above all other advantages, this one is certainly obtained by it; when ſuch ſheep are put to fatten, they thrive much better, and faſter; as oxen do, that have been moderately worked.

Upon moiſt lands ſheep are not proper ſtock. The dairy will here turn to greateſt account; and women and half-grown children will from hence find ſufficient, and becoming employment. Where this is the caſe, pigs ſhould be bred, of all animals the moſt profitable. Potatoes, and carrots boiled in the ſkimmed milk, and whey, make an excellent food for young pigs; and every one knows how far an acre of theſe uſeful roots will go, and how profitable a farrow of pigs is to the breeder. But great farmers, whoſe ſole object is to grow corn, look upon hogs as troubleſome animals, and affect to deſpiſe theſe profits; tho' even to them they would not be inconſiderable. Beſides that hog-dung is the beſt of all manure.

Upon ſtrong, florid paſture, the large ox ſeems the moſt ſuitable ſtock.

Upon turnips, the Welch, or Scotch, bullock is moſt profitable.

Thus different land, and different produce ſeem, in point of profit, to require different animals, to cultivate the one, and conſume the other; and it is worth our while, to be at ſome pains, to make the beſt application.

MANURES CONSIDERED.

THE manuring of land is ſo neceſſary a part of huſbandry, that no object is more eſſential, in the practice of farming, than that of procuring a ſuitable, and ſufficient quantity of this uſeful improvement. We find, that the richeſt land will not yield a long ſucceſſion of crops, without help; at the ſame time that the pooreſt ſoil will make a conſiderable return, when we take pains to aſſiſt it. We ſhould therefore firſt endeavour, to raiſe as much vegetable, and animal, manure as poſſible; and, next, contrive to multiply it, by adding ſuch other uſeful, component, parts as induſtry may find, in different ſituations.

Nothing tends ſo much to the increaſe of vegetable, or animal, manure, as a judicious choice in our ſyſtem of cropping. I am inclined to believe, that any limited

portion

portion of land, tolerably good in nature, will produce, if well cultivated, and properly ſtocked, vegetable, and animal, manure enough to ſupport itſelf, in good heart, for ages, without any foreign aid. But no exact rules can be given in writing, what the courſe of cropping ſhould be, ſince ſoils vary ſo much. But it may be aſſerted with confidence, that the moſt advantageous one does not conſiſt, in the old mode of ſowing three crops of grain, in ſucceſſion, and then letting the ground remain two, or three years more without yielding any thing, under the notion of recovering it by reſt. This ſyſtem ſhould be wholly exploded. The huſbandry of the *Auſtrian Netherlands* is, undoubtedly, the moſt uſeful that is practiſed. There the land, like our gardens, yields a crop every year without diminiſhing the leaſt in its own value. The whole contrivance lies, in interweaving, as much as poſſible, the crops which are particularly uſeful to man, ſuch as wheat, barley, potatoes, beans, and peaſe, with the crops moſt uſeful to beaſts, ſuch as turnips, carrots, vetches, cole-ſeed, and artificial graſſes. The more we plant, or ſow, to the mutual benefit of man, and beaſt, the nearer we are to the beſt ſyſtem; and conſequently to that which will produce the greateſt proportion of vegetable, and animal manure.

The turnip-ſyſtem, in *Norfolk*, comes as near to the practice of the *Netherlands*, as any made uſe of in England; one of their beſt courſes is divided into ſix diviſions, as follows:

1. Wheat, after clover, or artificial graſſes.
2. Barley.
3. Turnips.
4. Barley, with clover, or other artificial graſſes.
5. Clover, or artificial graſſes, of the firſt year's lay, generally mowed.
6 The ſame of the ſecond year's lay, generally grazed.

To ſupport this courſe of cropping, they manure invariably for wheat, and turnips, but not for any other crops. They ſupport a great deal of ſtock by this means, and keep their ground in good heart, and very clean; but find an inconvenience, in their clover's coming round in too quick a ſucceſſion; by which means the land is tired of it. This ſyſtem might be improved upon, by a cloſer imitation of the *Flemiſh-Huſbandry*, by dividing the land into eight diviſions, cropped ſomewhat in the following order:

1. Year, wheat after clover of one year's lay.
2. Ditto, turnips.
3. Ditto, barley.
4. Ditto, peaſe, beans, potatoes, vetches, or cole-ſeed.
5. Ditto, wheat.
6. Ditto, turnips.
7. Ditto, barley, with clover ſeed.
8. Ditto, clover.

By this method the ground will, almoſt regularly, produce an alternate crop, for man, and beaſt; and the land will never loath the clover, becauſe it will only ſtand one year out of eight, inſtead of two out of ſix. Every other crop will likewiſe be meliorating. The ground will be kept perfectly clean, and the produce will occaſion manure enough, to keep it in good condition. I would not however inſinuate this to be practicable, except upon pretty good land. Where it is naturally poor, this ſyſtem cannot be adopted. Here ſheep will be found the moſt profitable ſtock; becauſe the manure obtained by penning will be the cheapeſt, and beſt, improvement to be had; and therefore ſuch graſs-ſeeds ſhould be ſown, as are moſt durable; which ſhould be continued in the ground at leaſt four years, taking care to manure them well, the firſt year after they are ſowed.

Any intelligent farmer will, I am perſuaded, ſee the force of this argument; and conſider a good courſe of cropping, as the firſt ſtep neceſſary to be taken, towards enriching his land.

I would next recommend an advantage, to be derived from the quantities of maiden-earth which are to be met with, at the ſides of many of our roads. Theſe, mixed with muck, or lime, make excellent manure for our corn, and turnips. In *Eſſex*, they are particularly induſtrious in this practice; and as the outſides, or ſkirts, of incloſures, though enriched by rotten leaves, ſeldom produce any corn, on account of the ſhade, and dripping, of the hedges, and what it does produce is of little value, becauſe the birds prey upon it; they generally ſink theſe borders, at leaſt a foot deep, and mix them into compoſt, for the benefit of the reſt of the land, which is more expoſed to the ſun, and leſs liable to be preyed upon by the birds. Moſt eſtates afford a great treaſure in this reſpect; and no farmer is excuſable, in ſleeping over ſuch advantages. If it be alledged, in anſwer, that this is only a temporary advantage, it cannot however be denied, but that it muſt increaſe the ſtaple; and though it may only improve it for the preſent, this is no inconſiderable point gained. For land, like animals, when once brought into good heart, may, with a little care, be eaſily kept ſo; but when much out of condition, it is very difficult to be brought into a vigorous ſtate.

Next to the banks in roads, and the borders of incloſures, the ſcouring of old ditches, the mud of ponds, and ſediment of all ſtagnate waters, are particularly excellent upon graſs land; and a ſmall mixture of lime is well beſtowed among it. If theſe better ſorts cannot be met with, then any common maiden-earth, with one ſeventh part of lime, and one other ſeventh of rotten muck, will be very proper manure for moſt kinds of paſture, as I have before obſerved in treating of Natural Graſſes.

Clays, of every kind, are highly ſuitable to all ſandy, or light ſoils; becauſe they brace the looſe particles together, give them ſtrength, and keep them moiſt.

By parity of reaſoning, ſand is equally beneficial upon all clays, and other tenacious, ſtiff land; becauſe it ſeparates the parts, and deſtroys their coheſive quality; by which means the ſun, air, and froſt penetrate them the better. This muſt be very obvious to every one; yet very little of this has been done, in proportion to the vaſt improvement it may effect, and the variety of ſituations where it will be found to anſwer. Upon this laſt principle, cloſe land, inclined to ſtones, ought not to have them picked out.

Sand is likewiſe of great uſe upon rough, coarſe, meadows; nothing fines the ſurface more, or produces a thicker ſet of Dutch clover.

Chalk, if it be of an unctuous, ſoft, quality, eaſy to diſſolve, is a moſt valuable manure upon moſt land; but upon ſour land, or any clay, it has a ſurprizing good effect; it looſens, and meliorates it, renders it highly fruitful, and ſweetens the produce, when it is in graſs, exceedingly; and, if uſed in compoſt, may be repeated for ages.

Marl differs greatly in quality; that which is moſt weighty, and ſoapy, when moiſtened, is the beſt. If it be right good, and laid on in liberal quantities, it throws the land into a fermentation, and frequently changes its very nature; rendering it highly fruitful; though it ſeldom has any great effect, before the third year. But it makes ample amends, when it does operate; for it will be felt, without a repetition, at leaſt twenty years. No manure, in ſhort, is ſo laſting. Some people have imagined, that *marl* will not anſwer a ſecond time; but I am of opinion, that if a ſmall quantity be uſed, in a compoſt, it may be repeated, with very good ſucceſs, every tenth, or twelfth year.

All aſhes are indiſputably good; but peat-aſhes are the nobleſt manure we have, for all kinds of artificial graſſes. Thoſe who live in the neighbourhood of *Newbury*, in *Berkſhire*, are ſenſible of their ineſtimable value.

There are undoubtedly a vaſt number of meadows and commons, in may other counties, where peat may be found; but, though its aſhes are one of the moſt valuable ſorts of manure the kingdom produces, it is very little ſought after, and very far from being generally known.

Soot is excellent on moſt land, but beſt beſtowed on artificial graſſes.

Maritime counties have many advantages over others, not only in the opportunities they have of, ſometimes, importing manure, but in being able, frequently, to collect great quantities of ſea-weed and uſeful ſea-ſand.

Salt is known, and univerſally allowed, to be a great ſtimulator of vegetation; and gentlemen in parliament cannot ſerve the Public, or themſelves, better, than by getting the duty lowered upon ſo much of it as might be uſed for manure. But this article, in my opinion, would anſwer beſt, when mixed with other coarſer manures; and thus applied, a little would go a great way, and bear repetition, which it would not otherwiſe do. I ſhall paſs over a variety of other manures, which are excellent in their nature, becauſe they cannot be had in ſufficient quantities, to effect any improvement upon a large ſcale. Some of them are bones, rags, and the dung of poultry. Where they can be met with, it is to be ſuppoſed, that no perſon will be ſo blind, as not to avail himſelf of their uſe.

MAXIMS RELATIVE TO PLOUGHED LAND.

EXPERIENCE ſhews, that the longer we keep off the ſucceſſion of any grain, the better the crop will prove. Land delights in a variety of ſeeds; and loaths a too frequent repetition of the ſame grain. Clover, in particular, may be ſown, till the ground will be ſo thoroughly weary of it, as to reject it entirely. This has induced many farmers, to attempt the growth of ſeveral ſpecies of grain, and graſſes, wholly incompatible with their ſoil; thereby running at once into the oppoſite extreme. True judgment will introduce as much conſiſtent variety as poſſible, and equally avoid the folly of courting objects wholly inappoſite.

If the ſoil be ſtiff, cold, and ſuitable only to wheat, beans, and oats, it will be abſurd, to aim at ſeparating theſe crops with turnips, and barley. The better way will be, to interweave ſome meliorating crops, ſuch as buck-wheat, which is an excellent exchange for this ſort of land. The great weſt-country cabbage would ſometimes be a valuable crop here. On the other hand, upon a very light, ſandy ſoil, wholly calculated for rye, barley, turnips, and artificial graſſes, it would be equally ridiculous to lay much ſtreſs upon wheat, beans, and oats. Here potatoes, carrots, and vetches, will keep the ground cool, and prove valuable crops.

Upon a loam, the advantage of both ſorts of grain may be united; and as almoſt all the articles before enumerated may be ſown upon it, there will be no difficulty in varying the different ſpecies of grain.

Another material thing to be attended to is, the ploughing at proper ſeaſons. In general, land receives injury from being ploughed in wet weather; at leaſt it often tends to promote the growth of weeds, inſtead of deſtroying them. Land that is deſigned for winter-fallow, ſhould be ploughed before the end of November; ſo that it may receive the full benefit of the froſt. Provided it be ploughed clean, it cannot lie too rough. Land, for ſummer-fallows, ſhould be broken up early in May; and every ſubſequent ſtirring ſhould be a croſs ploughing; and if it be ploughed ſhallower, and deeper, alternately, during the ſummer, it will, in general, help to clean it the better.

There is a method of huſbandry practiſed in ſome counties, which ſeems to me highly pernicious. It is called burn-baking, or breaſt-ploughing. It muſt have taken its riſe from lazineſs. Where land is covered with a coarſe, rough, ſward, or is become very foul, the indolent farmer, to avoid the pains of making it clean, ſolicits his landlord (or, in ſome places, the cuſtom is ſo prevalent, that he does not even aſk him) to grant him leave to pare and burn the turf; by which, if he has a dry ſeaſon, he gets rid of all his trouble at once; and generally procures three, or four, florid crops, by means of the aſhes. But this is obtained at a heavy expence to the landlord; whoſe property, in the fee-ſimple of ſuch land, is, by this means, diminiſhed at leaſt one fifth. The injury is ſo obvious, that no unprejudiced perſon can well doubt of it. The ſward, or ſkin, is generally pared off, by this method, to the thickneſs of about two inches; and as it is of a hollow ſubſtance, it may be admitted, that if the earth were well ſhaken out, and ſeparated from the roots of the graſs, theſe two inches might be reduced to one. But when this two-inch-turf is burnt to aſhes, thoſe aſhes will not cover the ground to the thickneſs of a half-crown-piece; ſo that, upon any ſoil, this diminution muſt be ſeverely felt for half a century afterwards; and upon a ſhallow ſoil it is next to deſtruction.

Farmers will aſſert, by way of reply, that they only burn the roots of the rough graſs, and that the fire does not reduce the earth, or ſoil. But it is well known, that the ſurface of all land, to a conſiderable depth, is nothing but the relics of putrified vegetables, and plants; and therefore will admit of a diminution. And though the crops will flouriſh for a few years, the great, and laſting, nouriſhment to vegetation is by this practice deſtroyed.

Ground will ſometimes be rough-ſkinned, and exceedingly difficult to be cleaned; which, I apprehend, induced ſome ingenious perſon, a few years ſince, to invent, and conſtruct, a plough, which remedies the inconvenience at once. This plough has two ſeparate ſhears, and coulters; but both are contrived to operate in the ſame line, or direction. They are each of them ſet to any depth, and lay the ground the ſame way. The firſt pares off the turf, or ſkin; the next ploughs up a clean body of earth, and throws it directly over the former, ſo as to bury it effectually. By which ſimple means, the land is at once effectually cleaned. Whatever further working the ground may require, it may be done by ſhallower ploughing, to which particular crops may be ſuited. And there is no neceſſity for bringing the rough, or foul, part up again, till it be entirely rotten. Sometimes two crops may firſt be taken. This method is practiſed much among the gardeners and farmers, in the neighbourhood of *London*; and might be everywhere adopted, except where the land is ſtony, or remarkably ſhallow. Nor is this plough at all difficult to manage, or much harder to draw than one of an ordinary conſtruction. The inventor, whoever he was, may juſtly pride himſelf upon his diſcovery *.

Deep ploughing has been greatly recommended, by ſome modern writers. Upon particular land, where the bottom and top are of two oppoſite qualities, and neither of them right good, a mixture is ſometimes very beneficial; and here this experiment, of going below the common depth, may ſometimes anſwer. But where the top and bottom, for eighteen or twenty inches depth, conſiſts of the ſame ſoil, I do not believe it is ever worth while, to exchange the upper part, which has been enriched for centuries back, for a part leſs rich, merely becauſe it is more freſh. I have indeed obſerved, that deep ploughing (except for ſome particular grain and plants) is by no means neceſſary. The vegetation of ordinary corn, and graſs, does not require any great depth. In many parts of *Cornwall*, the land is exceedingly fruitful, though the ſoil is extremely ſhallow; and, in many other counties, they find, by experience, that they ruin their land by ploughing below the uſual depth. Beſides, when land is ploughed very deep, the roots of the weeds are only turned over, and removed, and hardly ever thrown upon the ſurface to wither; but clean, ſhallow, ploughing diſlodges, and deſtroys them much more effectually. Nay hand-hoeing is allowed by every body, to do more towards cleaning land than a ploughing. And even the pernicious practice of burn-baking, which I have juſt ſpoken of, effectually cleans land, though it only goes two inches deep. This ſeems to ſhew, that very deep ploughing is by no means neceſſary, towards cleaning land; and it muſt be univerſally allowed, that the longer we keep our manure within three, or four, inches of the ſurface, the better; eſpecially upon a light ſoil, from which it is apt to ſink, and eſcape too ſoon *.

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* Since the firſt edition of this book, I have been informed, that the Public is obliged to Mr. Duckett, of Peterſham, in Surry, for this uſeful plough.

With

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* Upon all light ſoils, it is neceſſary to preſerve, at ſix, or eight, inches below the ſurface, what farmers call a Pan; that is, the ſtaple, at that depth, ſhould be kept unbroken; by which means, manure will be kept longer on the top; and in dry ſeaſons, the leſs depth the pan has, the leſs liable the corn will be to burn; provided the pan conſiſts of earth, and not of rock:

With reſpect to the ſort of plough which merits preference, there is none which can, perhaps, be univerſally recommended. But upon all ſandy, or loamy, land, the *Norfolk wheel-plough*, with one handle, which is extremely light in its conſtruction, clears its furrow remarkably well, and is effectually worked with two horſes, ſeems the beſt; and is moſt like what they uſe in *Flanders*, where they frequently plough their land with one horſe. Next to this plough, there has been an iron ſwing-plough lately invented, in *Suffolk*, which is very light,

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rock: becauſe the roots of the corn will find more moiſture, by ſtriking againſt a body of cloſe earth, than they will in a greater depth of hollow earth; as, it is evident, the former preſerves more moiſture in dry ſeaſons.—Another advantage which is obtained from this pan, is the having a leſs quantity of mould to work, and keep in heart.

Where very deep ploughing is practiſed, this bottom, or pan, muſt be deſtroyed; and much more manure will be required, in that caſe, to keep the ground in good condition.

and uſeful; and many give it the preference to the former. I mention theſe two only, becauſe they are a horſe's draft eaſier than moſt other ploughs, and do their work as well as it can be done. For the buſineſs of clean, ſhallow ploughing, the *Norfolk plough* is, perhaps, better than any other.

IMPROVEMENTS, AND THEIR EXPENCES.

THE beſt advice which can be given to a man of fortune is, to perſuade him to carry on all improvements, which are out of the common way, at his own expence. There are but few tenants capable of ſinking any conſiderable ſum of money, even when the proſpect of a return is ever ſo promiſing; they can much better afford, to pay an increaſe of rent, equal to ten per cent. for ſuch money as the landlord may lay out upon judicious improvements, than they can, to ſink a leſs adequate ſum in ready money. But the gentleman's purſe, and the farmer's labour, will do great things, when the contract between them is ſo contrived as to yield them mutual benefit. A vaſt deal of land might be more than doubled in value by draining; but the improvement, though obvious to every obſerver, is generally neglected, either becauſe the tenant's term in the premiſes is not long enough, to reimburſe him the expence, or elſe for want of ready money to diſcharge it. The landlord, in this caſe, is much to blame; for, let the cauſe be which it will, he may apply the proper remedy. If he chooſe to lengthen the term, the tenant will generally do the work; but if he does not chooſe to grant a farther term, he ſhould at leaſt pay the expence of the improvement, taking proper intereſt for his money, during the remainder of the exiſting demiſe, and then he would have the benefit of its reverſionary value, after its expiration. If money be wanting to the landlord, as well as the tenant, it may be worth while to ſell a part of his eſtate, to improve the reſt. Next to draining, claying, marling, and chalking deſerve liberal encouragement; and where a tenant has ſpirit to ſet his hand to theſe capital objects, leaſes, of twenty-one years at leaſt, ſhould never be with-held; for, where they are, the owner of the eſtate is guilty of a preſent injury to the public, and a future one to his own poſterity. Eſtates, undoubtedly, ought to be let for their fair value. The bad effects are equal, whether they be under-let, or over-let; in the one caſe, the tenant is frequently negligent, in the other, he is diſcouraged; but, when the true value of an eſtate is known, and a good tenant offers, it is unreaſonable to expect him to riſk his property, without putting him upon a footing of ſome certainty. And therefore land-owners who refuſe leaſes, in ſuch caſes as this, merely becauſe they will keep their tenants in a ſtate of ſubmiſſion, and dependence, are inexcuſable in ſuch conduct; becauſe they prefer a ſimple gratification to their real intereſt, and to the more enlarged notions of contributing, all they can, to the advantage, and proſperity, of their country.

Even in the ſingle buſineſs of collecting different ſorts of manure together, it cannot be expected, that a tenant at will ſhould look forward, beyond the immediate crop which he is preparing to put into the ground.

There is an infinite field for improvement, in numberleſs other points, which almoſt every large eſtate admits of; and of which every owner may avail himſelf, by a ſpirited application of a little ready money. The mode is certainly practicable, and promiſing in its effects; and thoſe who adopt it, will find their advantage in it.

WASTE LANDS CONSIDERED, AND THEIR SUITABLE IMPROVEMENT SUGGESTED.

THOSE who have made obſervations upon the wealth of this country, have conſidered our extenſive foreſts, chaſes, and commons, as one of the greateſt reſources remaining to us; and have lamented, that ſuch noble tracts of land ſhould be ſuffered to lie in a neglected, unprofitable ſtate, while lands, of a worſe quality, are cultivated, in many unhealthy parts of America. The foreſts, and chaſes alone, would be a treaſure, under proper regulations; they are naturally the fineſt ſpots, the beſt nurſeries this country affords, for the produce of *Timber*; and, if judiciouſly planted, and well protected, would hereafter furniſh almoſt a ſufficient quantity for all the purpoſes of the navy; but at preſent, there are ſo many different intereſts ſubſiſting upon them, that in point of real value, they are little more than blanks in the kingdom. Time, it is to be hoped, may correct this defect, and render them of advantage to ſociety.

Since the firſt edition of this book, a rumour prevails, that there is a ſcheme in agitation, for incloſing a conſiderable part of theſe valuable diſtricts, under the ſanction of Parliament.

If ſuch ſhould be the event, may ſucceſs attend the project! may the crown derive that great advantage from it, which it is entitled to, and private happineſs, and proſperity, go hand in hand with it! which it will certainly do, provided the buſineſs be conducted upon a liberal plan.

As this ſubject is of conſiderable importance, I hope it may not appear preſumptuous in me, if I make a few more remarks upon it; which I offer with great deference, being inſtigated merely by motives of public zeal.—The foreſts may be conſidered, as a rough jewel, of great value; but which will require much labour and ſkill to poliſh it, before it can appear with proper luſtre. Under the idea of their being to be incloſed, and diſpoſed of to individuals, they are no longer to be conſidered in the light of nurſeries for timber, or reſources for the uſe of the navy. They are now to be viewed, as a ſort of new creation, auſpiciouſly opening itſelf upon us, and inviting induſtrious hands to cultivate and raiſe from them corn, graſs, and various other comforts of life; and I am ſtrongly, and I hope not erroneouſly, of opinion, that the improvement of theſe lands, provided they are all comprized in this plan, will contribute as much to the produce, and population, of this country, as would the addition of another county, equal to thoſe of moderate ſize.

The tenure, in the grant of theſe lands, is one material thing to be conſidered, and the portions they are to be granted in, another.—As I am wholly ignorant of the view of government, I cannot pretend to ſay, what ſort of tenure, would, at preſent, beſt anſwer its purpoſe; but I humbly conceive, that the tenure which gives the greateſt encouragement to the adventurers, will in the end be moſt beneficial to the crown—and where the object in view, is the increaſe of produce to the public, and population, and riches, to the ſtate; good policy will ſuggeſt the moſt liberal conditions.—A judicious regulation of this buſineſs, will convey a bleſſing to this country; an improper one, will have the moſt pernicious effect.

If men of the firſt fortune, and great command, are ſuffered to monopolize large portions of this land, it will probably be ſold for leſs than its value; be laid out in large farms; be badly, and ſlowly, improved; and population will receive no benefit from the incloſure, but rather a hurt. But if this land be divided, into a great number of ſmall lots, and diſpoſed of by public ſale, without favour to any particular perſons, it will bring a much greater ſum to the crown; be better, and ſooner, cultivated; and ſupport, and employ, many more people, than it will, if diſpoſed of in the groſs. —If it ſhould be alledged, that even theſe ſmall portions will, by degrees, be re-ſold, and get into a few hands, like other eſtates; this, I own, is a grievance which cannot well be guarded againſt: But though this might, in part, happen, it would never be general; and it would take ſome time to effect ſo conſiderable a change. In the mean while, the land would be better drained, and cultivated, and much more timber would be planted, by having it laid out in ſmall incloſures; all which are very conſiderable objects.

If any other argument be wanting, to induce the perſons, who may be concerned in this buſineſs, to prefer the plan of ſmall, to great, allotments; humanity will add her entreaties for the adoption of it, and popularity will applaud the act.

Many other waſte lands are at the diſpoſal of individuals, and thoſe I ſhall principally conſider; but it will not be amiſs to examine, firſt, the objections, which are often made againſt incloſures of this ſort.

It is obſerved by the advocates for *commons*, that they are of great uſe to the poor; that a greater number of people are ſupported, by means of them, than would be without them; and that a vaſt number of young cattle are likewiſe bred upon them. Theſe obſervations are generally made by well-meaning people; and there is ſomething very humane, and ſpecious in their concluſion. But on examination, it will appear, that cottagers who live at the ſides of *commons*, generally neglect the advantage they have before them. There is not, perhaps, one out of ſix, upon an average, that keeps even a cow; and, being generally tenants, and ſeldom owners, they rent theſe miſerable habitations proportionably high, on account of their ſituation. It is the owner, therefore, and not the occupier of theſe cottages, who, in fact, gets what advantage there is to be had. The cottagers themſelves are not, in any ſhape, more comfortable than thoſe who live in pariſhes, where there are no commons; becauſe if there be any advantage to be derived from their ſituation, they do not enjoy it without paying for it. But I am inclined to believe, that the precarious profits of a common ſometimes diſappoint them; and that conſtant, regular, labour is a better ſupport; at leaſt it would be, provided gentlemen of fortune would take the laborious poor more under their protection; for which I ſhall venture, in another place, to ſuggeſt a plan.

As to the advantage which population is ſaid to receive, it bears no proportion, to what it would do, if theſe commons were cultivated, and diſpoſed into proper allotments. It may be aſſerted, that, within thirty miles of the *capital*, there are not leſs than 200,000 acres of waſte land. Theſe lands, in a proper ſtate of cultivation, allowing fifty acres to a family, one with another, would find employment for, at leaſt, four thouſand families. It never can be ſaid, with truth, that theſe waſtes ſupport, in themſelves, without other help, half that number of people in their preſent ſtate. Beſides, theſe lands, when cultivated, would not only ſupport the people employed upon them, but would be exceedingly uſeful in the ſupport of others, who follow different employments.

The argument made uſe of, relative to the advantage of raiſing young ſtock, has much leſs foundation to ſtand upon. Every one knows, that all commons are wholly neglected. No draining, or any improvement upon them, is ever undertaken; ſo that the produce is very trifling, compared to what might be expected from the ſame ſoil, if it were properly managed. Their being fed at all ſeaſons, is another diſadvantage which *commons* lie under; and as neither ſurface water, or ſprings, are ever led off, they frequently occaſion the rot, and other diſtempers in cattle; and often deſtroy as many as they ſupport.

Many pariſhes poſſeſs a right of common upon a thouſand acres; which, if cultivated, would be worth from 500 *l.* to 1000 *l.* a year. In theſe, the poor-rates are, generally, higher, than where there is no common at all. To account for this, it is replied, that there is a greater number of inhabitants, than there is in a pariſh, of equal ſize, where there is no common. Very true; there may be more inhabitants, in proportion to the cultivated parts of the land, in the one pariſh, than in the other; but if the whole of the pariſh which has the common, was brought into the ſame ſtate of cultivation as the other pariſh which has no common, the poor would find fuller employment; and as the proportion of profitable land would be greater, the rates, of courſe, would be eaſed; for admitting that there would be as much paid as before, there would be a greater quantity of land to furniſh the ſupply; and, in this point of view, landed property muſt be better enabled to ſupport its poor, where commons are incloſed, than where thoſe commons remain unimproved.

It may be ſuppoſed, that two-thirds of all the commons in *England* will admit of improvement. Many parts, by judicious draining, would make good paſture-land, and dairy farms, which would be very uſeful, and profitable, and are everywhere wanted. Other parts, which now produce furze, would bear good corn. Even a great deal of heath-ground would produce turnips, light grain, and artificial graſſes; eſpecially where clay, marl, or chalk can be obtained. In *Norfolk* vaſt tracts of this land have been improved, to the mutual advantage of landlord, and tenant, and to the great benefit of the country.

To ſuch gentlemen as have objects of this ſort before them, the following hints may, perhaps, be acceptable.

Where incloſures are made, which are deſigned for paſture, the fences ſhould be contrived, to anſwer, as much as poſſible, the uſe of drains; and it will be adviſeable, to ſink the ditches to a good depth at once. Having this double advantage in view, ſuch new incloſures ſhould be made more in parallelograms, than ſquares; the longeſt ſides lying acroſs the deſcent, as much as the ground will admit of. And as it is very material, to raiſe the fences as ſoon, and as cheap as poſſible, it is a good way to ſow furze-ſeed, on the top, and at the back-ſide of the ditches. It has a quick growth, keeps the layer warm, and ſheltered, makes a fence in a few years, and, in ſome particular parts, where people keep a watchful eye upon their cattle, will render the expence of poſts and rails unneceſſary.

Parts deſigned for tillage, in the ſummer preceding their being broken up, ſhould have the furze, goſs, fern, or whatever is upon it, effectually cleared away, and the roots ſtubbed up. Early in the enſuing winter, the ground ſhould be ploughed up, with a ſtrong plough, and left in rough furrows, till a month after Candlemas, that the froſt may penetrate, and chaſten it. Then it ſhould have a briſk croſs-ploughing, and afterwards an harrowing. In the ſpring of the year, and all the enſuing ſummer, it ſhould be fined, cleaned, and ſweetened by frequent ploughings. The remaining roots, and rubbiſh, may be ſhaken out, and burnt. The next winter it ſhould be laid up again in ridges, as high as the plough can lay them. In May following, two buſhels of buck, or French wheat, may be ſown upon an acre; or, if the ground be pretty good in quality, or ſtrong in nature, it may anſwer better to ſow it with cole-ſeed in July, or Auguſt following. The buck-wheat ſhould be ploughed under for manure, when the ſap, or milk, is in the ſtem, and the flower in full bloom, juſt before the ſeed begins to ſet; and this ſhould remain under furrow, without diſturbance, till a fortnight before Chriſtmas. Buck-wheat generally thrives better than any thing elſe, on this ſort of ground, as a firſt crop, and very often the crop is not contemptible.

The cole-ſeed, if it produce ever ſo light a crop, will be of vaſt advantage, as it will invite the ſheep upon the land; and their treading, and manure, will be of great benefit. They may be kept on ſuch parts, from the latter end of November, to the middle of April, in feeding off this crop. The next ſummer turnips ſhould follow, according to the mode of cultivation I have deſcribed in another place. Upon this ſort of land, the whole crop of turnips ſhould be fed off, where they grow, contrary to the practice which I recommend upon an improved farm. Two ſorts of ſtock will be proper for the conſumption of the crop. The turnips ſhould be hurdled off in ſmall lots. The firſt parcel of cattle ſhould be ſtock, deſigned for the butcher, and ſhould have a freſh bait every day. The other parcel may be lean, or ſtore-cattle, which will thrive well on the refuſe. After theſe turnips, barley, with graſs ſeeds, may be ſown; and theſe graſs ſeeds ſhould be continued at leaſt two years. When the land is broke up again, it will be fit for a regular courſe of huſbandry. And about this time, it will be proper to begin caſting the clay, marl, or chalk, which-ever may be eaſieſt come at. The land will want ſome ſuch aſſiſtance, to finiſh its improvement; and it will be improper to lay it on before, as the ground ought to be firſt ſettled.

In the courſe of my practice, I have been inſtrumental in the improvement of conſiderable tracts of land, of this ſort; and have generally found it anſwer extremely well; for if the ſoil be tolerably good, and the method of improving it prudently conſidered, it is very often an eſtate created, at a moderate expence. The beſt method of improving waſte lands is, that which tends to the mutual advantage of landlord, and tenant. This may be eaſily done, by accommodating the latter with a leaſe of thirty years, and allowing him all the furze, fern, or whatever may be upon the land, at the time the improvement is begun, together with all he can grow upon it, during the firſt three years of the term, without requiring any advance of rent. In the mean while, the landlord ſhould be at the expence, of erecting all neceſſary, new fences, gates, and buildings; and, at the end of the firſt three years, be at the farther expence of half the charge of marling, chalking, or claying; which half of the expence will be, from thirty ſhillings to three pounds an acre, according to the diſtance, and difficulty, in getting the manure. Here the landlord's whole expence ends. For the next three years, the tenant ſhould pay five ſhillings an acre, yearly; for the next ſeven years, ſeven and ſix pence an acre; and for the remaining ſeventeen years of the demiſe, ten ſhillings an acre; which may be ſuppoſed to be the medium value of this ſort of land when the cultivation is completed. Some, of courſe, will be of more, and ſome of leſs value. This method I have known to anſwer; but, where a gentleman has ſeveral farms, in the neighbourhood of any large waſte, which he wants to improve, it will be beſt to divide the object among ſeveral tenants, as leſs expence will be required in buildings. Beſides, where a man takes a large tract, ſufficient for a farm of itſelf, he will be ſeven years in clearing, and breaking the whole of it up; and it is not reaſonable, to expect that his leaſe of thirty years ſhould commence, before the time of his clearing the laſt part. Upon theſe terms, there are induſtrious men enough to undertake ſuch improvements. A few words, and figures, will ſhew the landlord's advantage in it. I will calculate upon 500 acres, under every diſadvantage; ſuppoſing it worth two ſhillings an acre in its natural ſtate, and ten ſhillings an acre when improved,

This

			l. s. d.
This quantity of land, at the end of the firſt thirteen years, valued at 10 *s.* an acre, and thirty years purchaſe, will be worth — — — —			7500 00 0
From which deduct			
The expence of erecting buildings, for a complete farm of the before-mentioned ſize — — — — —		1140 00 0	
Allowance for fencing, ſuppoſing the incloſures to be about ten acres, upon an average. The quickſets, or layer, furze ſeeds and all included, 4600 poles, at 2 *s.* a pole — — — —		460 00 0	
Fifty gates, at 14 *s.* each — — — —		35 00 0	
Loſs of the three firſt years rent, upon the whole quantity, at 2 *s.* an acre —		150 00 0	
Intereſt upon the four preceding ſums, for the firſt three years, at compound intereſt, reckoned at four per cent. — — —		225 00 0	
The moiety of the expence of chalking, marling, or claying, eſtimated at 2 *l.* an acre. To be expended at the beginning of the fourth year —		1000 00 0	
From the beginning of the fourth year, to the end of the thirteenth, the ſix preceding ſums would produce, at compound intereſt, at the rate of four per cent. — — —	1514 6 0		
But, from this laſt ſum, muſt be ſubtracted			
The ten years increaſed rent, over and above the old rent of 2 *s.* an acre, from the beginning of the fourth year, to the end of the thirteenth, at compound intereſt, and four per cent. —	1383 9 0		
Difference — — — —		130 17 0	
Add, at the end of the thirteenth year, the original value of the whole quantity, at 2 *s.* an acre, and thirty years purchaſe — —		1500 00 0	
Deduct all theſe loſſes, expences, and original valuation — — —			4640 17 0
Neat gain, upon the cultivation of the above quantity, at the end of the thirteenth year			2859 3 0

This eſtimate is drawn, as though the whole of the 500 acres were broken up in the firſt year, and brought into condition, to receive the chalk, marl, or clay, the fourth year, as it ſhews the advantage of this improvement in a clearer manner, than it could otherwiſe have been done. The ſame ſcale of calculation may be applied, to a greater, or leſs, proportion of ground.

CULTURE OF TURNIPS.

THE culture of turnips being one of the moſt capital branches in agriculture, and the beſt method by no means generally underſtood, I ſhall give an exact deſcription of the *Norfolk practice*, originally brought into that country from *Flanders*; and annex ſuch remarks upon the uſe, and advantage, of this excellent root, as may recommend the ſame mode, in other parts of the kingdom, where this part of huſbandry is not ſo well underſtood.

In *Norfolk*, this crop anſwers three material purpoſes: it cleans the ground, which has been fouled by other crops; ſupports a vaſt deal of ſtock; and is an excellent preparative for almoſt every ſucceeding crop, particularly for barley, and graſs-ſeeds. The *Norfolk farmer*, ſenſible of its great importance, ſpares no pains, or expence, in the cultivation. He conſiders it as his ſheet-anchor, or the great object on which his chief dependance is built.

Wheat, barley, or oat-ſtubble is generally choſen, for the bringing on turnips. The ground ſhould be ploughed very ſhallow, ſome time before Chriſtmas, ſo as to ſkim off the rough ſurface only; and in the month of March following, it ſhould be well harrowed; and, after harrowing, have a croſs-ploughing to its full depth. If any weeds ſhew themſelves, it ſhould be harrowed again, about a week, or ten days, after this ſecond ploughing; but, if the land be in a clean ſtate, it is better without this harrowing; for, the rougher it lies, the better. In this ſtate, it may remain till the middle of May, when the Lent ſeed-time will be finiſhed, and the farmer at leiſure to work, and attend, his ſummer-lays. At this time, it ſhould have another ploughing, of equal depth to the laſt; and, if the weather be dry, and the ſoil ſtiff, be immediately harrowed after the plough. If the ſoil be light, it may ſuffice to do it at any time, within a week. By the beginning of June, the ground ought to be perfectly clean; and if the ploughings here recommended, be not ſufficient for that purpoſe, more ſhould be beſtowed. About this time, upon a ſuppoſition that the ground be clean, ten good cart-loads of manure ſhould be laid on to an acre, regularly ſpread, and ploughed in quite freſh, about half the depth of the two former ploughings; unleſs the land has been manured for the preceding crop; in which caſe, the manure may be ſpared for turnips, as it ſometimes is, though always well beſtowed, if it can be had in ſufficient quantities. In this ſtate it may remain, till about the twenty-firſt of June, when it muſt be well harrowed, to blend the ſoil and manure together. Thus harrowed, it muſt be ploughed to its full depth;

and the harrows drawn over the ground; only once, the ſame way it is ploughed. The ſeed is then immediately ſown, upon the freſh earth; not even waiting for the ploughing of a ſecond ridge. A quart of ſeed is the quantity generally ſown upon an acre. The ſeed is to be well harrowed in, only twice, the ſame way as the ground was ploughed. The beſt, and neateſt, finiſh is, to walk the horſes, which draw the harrows, the firſt time, and trot them the laſt. The harrows ſhould be ſhort-tined, and, the lighter they are, the better. The width of the ridges may be varied, from four to ten yards, according to the natural wetneſs, or dryneſs, of the ſoil. The manure may conſiſt of one-fifth maiden-earth, marl, old cement from walls, or almoſt any rubbiſh, and four-fifths muck; which ſhould be laid together, ſome time in the winter, the muck on the top; and ſhould be turned over, and well-mixed together, at leaſt a fortnight before it is made uſe of. If the ſoil be light, the muck cannot be too ſhort, nor too rotten; but if the ſoil be ſtiff, and coheſive, the longer the muck is, the better; becauſe it will keep the ground open; and land for turnips cannot lie too light. There is another manure, which anſwers extremely well for turnips, *viz.* malt-duſt, or combs, about twenty ſacks to an acre; each ſack containing as much as can be heaped upon three buſhels. The price, at this time, in *Norfolk* is, one ſhilling and nine pence a ſack; which is not very dear, when the eaſe of the carriage is conſidered; for a waggon will carry enough for three acres. This ſometimes is only harrowed in, inſtead of being ploughed in; for it ought not to be buried above two inches at moſt. Some ſort of manure is eſſentially neceſſary for turnips; and the liberal uſe of it is, perhaps, one of the principal cauſes, why the fly does not deſtroy the plant in *Norfolk*, ſo often as in many other counties. The ground, by this treatment, being in good heart, and the ſowing of the ſeed ſo timed, as to make it ſtrike root, juſt as the manure begins to operate upon the land, the plant is generally puſhed on with ſuch vigour, that the rough leaves form the ſooner, and put it out of danger much earlier, than in thoſe counties where they do not manure, and take theſe precautions. For there the plants come up ſo weak, and languid, that they are often deſtroyed in their infancy, which has always been a great diſcouragement to the cultivator.

The niceſt part of the turnip-huſbandry yet remains to be treated of, *viz.* Hoeing, without which all the former labour is thrown away. Ground prepared, and treated in the manner before-deſcribed, will, in about a month from the time of ſowing, if the ſeaſon be kind, produce plants large enough for hoeing. If they cover a ſpace of three inches in diameter, they will be of a proper ſize; and ſhould then be hoed with a ten-inch hoe, and ſet at fifteen inches apart, without paying any regard to the apparent health, in the choice of thoſe which are left. The expence of the firſt hoeing is four ſhillings an acre. About ten days after the firſt hoeing, or a fortnight at fartheſt, the ground muſt be hoed a ſecond time, ſo as to ſtir the mould effectually between the plants, and to check any riſing weeds. This ſecond hoeing is as beneficial as the firſt. The expence is from two ſhillings to half-a-crown an acre. About a fortnight or three weeks after Michaelmas, the turnips will be fit for conſumption; and may be uſed from that time to April, unleſs the froſt ſhould injure them. The almoſt invariable practice in *Norfolk* is, to draw the whole of the crop from wet land, and give them to cattle in cribs in the yard, or ſtrew them before their cattle, on ſome dry paſture, or clean ſtubble-land. The advantage derived from this is very great. In the firſt place they avail themſelves of every turnip, and the cattle have the comfort to eat them off a dry place, where they go twice as far, and do them more ſervice than they would trodden into, and picked out of the dirt where they grew. Even upon light land they draw half the crop, that is, every other ridge, or every other half-ridge, according to the ſize of it, and hurdle off the other half, to be conſumed by bullocks and ſheep in freſh portions, as they require them; letting the fatting ſtock in firſt, and the ſtore-cattle afterwards to eat up the offal parts. If the latter are neat cattle, another great advantage is derived by putting them into the ſtraw-yards at night, where the extra quantity of urine, occaſioned by feeding on the turnips in the day-time, contributes towards their making more, and better, manure than they otherwiſe would.

This method of drawing one half, and conſuming the other where it grows, ſhould be the univerſal rule; but wet ground will not admit of it. By this practice it is clear, that a *Norfolk farmer* manures twice at one expence; for, half the turnips conſumed where they grow, beſides the manure laid on when the crop was ſown, will leave the ground in an excellent ſtate for barley, and artificial graſſes; and the other half ſtrewed before cattle, on clean paſture or ſtubble, will improve it as much as a moderate coat of dung: and this very ſtubble-land in *Norfolk*, is often ſown with turnips the ſucceeding year, without any other manure, and does very well; but, when this is the caſe, the ſtubble cannot receive the firſt ploughing till March. There is ſomething ſo rational in this mode of cultivating turnips, and the benefit reſulting from it is ſo obvious, and conſiderable, that it is a matter of wonder how any farmer can heſitate in adopting the practice: yet I have never found that perſuaſion alone will prevail with men, accuſtomed to a different method of culture; and am inclined to believe, that nothing will be a ſufficient inducement but example, which ſhould be ſet by gentlemen of landed property, as well for their own advantage, as that of the public.

If this method of raiſing turnips ſhould be thought too expenſive, to anſwer in general practice, it ſhould be conſidered, that when the crop is good, twenty acres will fatten at leaſt fifteen bullocks, and ſupport ten followers, or ſtore-cattle, for twenty-five weeks; or ſheep, in the proportion of eight to one bullock; beſides the infinite advantage which this ſyſtem of agriculture is of to the land, by cleaning, meliorating, and preparing it for other ſucceeding crops, which is an object very much beyond the former in point of real profit. For it is evident beyond contradiction, that almoſt all the Norfolk eſtates have been improved, in the proportion of forty per cent. at leaſt, merely by marling, and this method of raiſing turnips; and many thouſands of acres which, before, grew nothing but furze, ling, broom, and fern, now produce fine crops of corn, and turnips, and ſupport a prodigious number of ſheep, and other cattle.

The white-loaf, or cream-coloured, turnips, are generally eſteemed the beſt ſort, and next to them the purple.

For the information of ſuch perſons as may not underſtand the manner of treating turnips for ſeed, it may not be amiſs to remark, that if the feed be gathered from turnips which are ſown for three or four years ſucceſſively, the roots will be numerous and long; and the necks, or part between the turnips and the leaves, will be very coarſe and big; and if they be tranſplanted every year, theſe parts will be too fine, and the tap-roots will diminiſh too much. The beſt way is, to gather the feed from the turnips which are tranſplanted one year, and ſown the other; or, if they be tranſplanted once in three years, it will keep the ſtock in very good condition. The method of tranſplanting is, to take up the turnips choſen for ſeed about

Chriſtmas, to cut off their tops, and to plant them as near the houſe as poſſible, that the birds may be kept off the better; which is a material conſideration, for they are very fond of the ſeed, which will be fit to gather in July.

In many parts of England, the reaſon aſſigned by farmers for not growing turnips is, that the ground is too wet to admit of their being fed off. They will often allow that they can grow turnips, but think them of no value, unleſs they can conſume them on the ſpot. This, to a *Norfolk farmer*, would be no reaſon at all; for there are vaſt tracts of land with them in the ſame ſituation; and when they cannot eat their turnips where they grow, they draw them without heſitation, and almoſt to the ſame advantage. This objection therefore falls to the ground, and it may be aſſerted with confidence, that if other counties would copy this practice of growing, and drawing their turnips, there might be five times the quantity raiſed that there now is.

I cannot cloſe this ſubject, without venturing to give even the *Norfolk farmer* one piece of advice, which I flatter myſelf will be of ſervice to him, if he will attend to it.

In very hard froſts, it is a difficulty to pick the turnips out of the ground; and the poor cattle are obliged to thaw them in their mouths, before they are able to eat them. The froſt, when it ſucceeds a wet ſeaſon, and then breaks into a ſudden thaw, is very apt to rot the turnips; and in the latter part of the winter thoſe which are ſtill left in the ground, are apt to draw, and exhauſt it very much, without doing themſelves any good, but rather injury, by running into ſtem. To remedy theſe inconveniences, I think it would anſwer extremely well, to ſink ſome few beds in the ground where the turnips grow, about two feet deep, of a conſiderable width, and to lay five or ſix layers of turnips into them one upon another, with a little freſh earth between each layer, and to cover the top over with ſtraw, to keep out the froſt; or elſe to carry them home, or into ſome clean field where they are meant to be conſumed, and to pile them up in ſmall ſtacks with the greens outward, a little clean ſtraw between each layer, and at laſt to cover, or ſkreen them with wattles or hurdles lined with ſtraw. If this were done in ſmall proportions, (I do not mean generally) it would certainly afford the cattle great comfort in froſty weather; would preſerve many turnips from the rot, which are now deſtroyed; and would diſpoſe of them better than by ſuffering them to remain till the middle of April, exhauſting and impoveriſhing the land.

CULTURE OF COLE, OR RAPE-SEED.

AS this plant is valuable in itſelf, and may be often interwoven with different ſorts of grain to very great advantage, by changing the ſucceſſion, where the courſe of huſbandry is but little varied; I ſhall, for the benefit of ſuch gentlemen as may be unacquainted with its nature, deſcribe the ſoil which ſuits it, the beſt mode of cultivating it, and its different uſes.

Cole-ſeed requires good land; and, if it has been long in tillage, a loamy, or mixt, ſoil does beſt. Very ſtiff clay is not ſuitable to it, and thin-ſkinned, poor, land is wholly inappoſite; but fen-land, marſh-land, and almoſt any old paſture, generally produces great crops of it; and it often ſucceeds well upon ſuch newly cultivated commons as, in their natural ſtate, produce thorns and furze.

The ground is to be prepared exactly in the ſame manner as for turnips, which I have particularly deſcribed in treating of that plant. If the ground it is ſowed upon be freſh broken up, it ſhould be firſt made perfectly clean; but if it be ſown upon land, which has been before in a courſe of tillage; wheat, barley, or oat-ſtubble is the beſt to make choice of; and the firſt ploughing ſhould be early in the autumn. If it follow wheat, then barley, or oats, with graſs ſeeds, ſhould follow the cole-ſeed; but if it follow oats or barley, then wheat ſhould ſucceed it; which delights to grow after it better than after any other crop, and is always of the beſt quality; and as the cole-ſeed will be reaped ſo early as July, the ground will admit, if neceſſary, of two, and ſometimes three ploughings before the wheat ſeed-time. The ſeed is to be ſown the laſt week in July, or the firſt week in Auguſt. If the land be not freſh, or in good heart, it ſhould be manured in the ſame proportion, with the ſame ſort of manure, and in the ſame manner as I have recommended for the turnip-crop. Two quarts of ſeed are, in general, enough for an acre; unleſs the cultivator ſhould prefer ploughing, inſtead of harrowing, it into the ground; in which caſe three quarts will be neceſſary; and the furrows muſt be very narrow, and ſhallow. If the ſoil be rather light, I believe the laſt method is the beſt. As ſoon as the plants are as big as the top of a radiſh, when drawn for the table, they are to be hoed, with a ſmaller hoe than that which is uſed for turnips. The rule is, to ſet them from ſix to nine inches apart, according to their apparent vigour, or the goodneſs of the land. One hoeing is enough; the expence ſix ſhillings an acre. Thus far attended to, the crop will remain, without requiring any other trouble, than protecting it from cattle, till the latter end of June, or the beginning of July following, when it will be ripe. The crop is then to be reaped, (the nearer the ground the better) and laid over the ſame ground where it grew, in very thin grips, or gavels. In about ten days, or a fortnight, according to the weather, having been once turned in that time, it will be fit to thraſh; which is done in the field, upon cloths laid upon a ſmooth part of the ground, or elſe upon wattles, or hurdles, laid over ſtools or pieces of wood; one end being elevated more than the other to ſhoot off the ſtraw, with cloths underneath to catch the ſeed. The laſt method is the beſt, though not the moſt common. It is brought to the thraſhing-place upon ſledges, drawn by one horſe, the bottom and ſides of the ſledge being lined with cloth, to catch the ſeed, which ſheds in the removal. The ſeed ſhould likewiſe be winnowed, or cleaned, in the field; and being put into ſacks, is then fit for market. This is often a very profitable crop; for if the ſoil be proper for it, forty or fifty buſhels may be expected upon an acre: there have been inſtances when the produce has amounted to eighty buſhels. The price indeed varies, from four ſhillings to ſeven ſhillings and ſix pence a buſhel, according to the quantity grown, and the kindneſs or unkindneſs of the ſeaſon; it being much ſubject to blight, and mildew, and its value, in ſome meaſure, is governed by the good or ill ſucceſs of the whale-fiſhery. The expence of reaping, turning, thraſhing, dreſſing, and putting it into the bags, is from one pound to one pound five ſhillings an acre. I ſhall follow the ſeed no farther, as I am not acquainted with the manner of extracting the oil, and preparing the cakes, which is a ſeparate branch of buſineſs; but the uſe thoſe cakes are of in fatting cattle, and manuring land, is not inconſiderable, being worth at this time four pounds a ton.

The ſtraw (preſerved from wet) may be

uſed for lighting fires, heating ovens, coppers, and burning in brick-kilns; but is not of much value for manure. The chaff and colder is generally burnt on the ſpot, and the aſhes ſpread about the ground. The ſtubble, if the ſoil be cloſe, is uſeful to the next crop; but if the ſoil be light, I do not apprehend it to be of any ſervice.

As I wiſh the cultivator to be acquainted with all the diſadvantages, as well as profits, of this crop, I would have him take notice, that when it is cultivated for ſeed it coſts as much, in putting into the ground, as a crop of turnips: and, ſtanding a whole year, takes up the ſame time as a turnip and barley crop together; but as the ground will be fitted to receive a better ſucceeding crop, than that of barley after turnips, it will be frequently found as profitable as both the other; and in that caſe, for the benefit of change and variety, it will ſometimes be prudent to give it the preference.

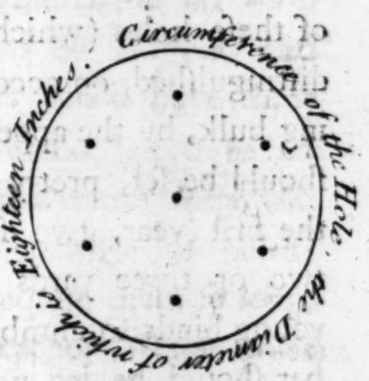
ference. I may add, that this crop is exceedingly uſeful in cleaning land, and is of a meliorating nature.

There are many people, who cultivate this plant merely for feeding cattle, and an exceeding good practice it is. The ground is prepared, and ſown in the ſame manner, as for the crop I have juſt deſcribed; but in this caſe there is no neceſſity for hoeing. It is fed off, as occaſion may require, from the beginning of November to the middle of April; and when this is the caſe, barley, and graſs-ſeeds are ſown the ſame year upon it, almoſt always with good ſucceſs. Before Chriſtmas, nothing is better for fatting dry ewes, and old ſheep of all kinds; and after Chriſtmas it is better than any thing for ewes and lambs. When fed early in the winter, if the froſt be not ſo ſevere as to rot the ſtalk, or ſtem, it will ſpring again the beginning of April.

It is generally ſuppoſed, that this ſeed is a great exhauſter of land; and ſo it is, if it be too frequently repeated; but it may be ſown, without prejudice, every fourteenth year for a crop, or every ſeventh for feeding cattle, but not oftener.

CULTURE OF HOPS.

THE ſoil for hops ſhould neither be ſandy, porous, or gravelly; coheſive clay, or moor; but a generous, rich, loamy mould, of at leaſt eighteen inches depth, of equal quality; the deeper the better. It muſt not be liable to injury from floods, or ſprings. The ſituation ſhould be open to the ſouth, and ſouth-eaſt, but well ſheltered on the other parts, particularly on the weſt; becauſe the winds, from that quarter, are often violent, and boiſterous, and do more injury to the crop, than even the northern winds. Old paſture-land of the beforementioned quality generally does beſt. It ſhould be broken up in the autumn; ſometimes it is ploughed, and ſometimes dug, but the latter practice is beſt. In the beginning of March the holes deſigned to receive the plants, ſhould be made, at the diſtance of ſix feet and a half a part; and 1300 of theſe holes may be contained in an acre. They ſhould be ſo ranged, or diſpoſed, as to form ſtraight lines every way. Each hole is to be a foot deep, and eighteen inches diameter, and to be filled quite full, of ſome good compoſt, made of rotten muck, and freſh maiden-earth well mixed, and incorporated together, at leaſt nine months before it is appropriated to this uſe. After the holes are thus filled, and the plants introduced, the compoſt ſhould be a little trodden by men's feet, eſpecially round the plant, ſo that it may be preſſed down, about two inches below the common ſurface of the ground. The original price of the plants is ſix pence a hundred, which is reckoned at ſix ſcore. Seven roots or plants are ſet in one hole, one in the center, and the other ſix, forming a circle round it, at equal diſtance, and at about four inches from the outſide of the hole, as deſcribed in the margin; the ſeven dots, contained in the circle, repreſenting the plants. The roots are ſet two inches deep in the compoſt, with only the top of the ſtalk juſt out; and after they are ſo ſet, the whole of the plants are covered over about two inches deep, with ſome of the native ſoil made fine, and drawn lightly over the compoſt, which will fill the hole even with the common level of the ground.


Circumference of the Hole, the Diameter of which is Eighteen Inches.

It is not prudent to ſow any thing, the firſt year, with the young plants, except onions; which may be done in the month of March, when the hops are ſet; and this generally proves a very valuable crop. They are much better than any thing elſe, becauſe they admit a more free circulation of air through the plantation. In each of theſe holes (which, in future, muſt be diſtinguiſhed, on account of their increaſing bulk, by the appellation of hills) there ſhould be ſet, pretty early in the ſpring of the firſt year, two ſmall ſticks of about two or three yards long, to teach the young binds to climb; and three in number ſhould be led up each ſtick, and tied with meadow-ruſh, ſedge, or ſomething of a ſimilar quality, two or three times, as occaſion may require, in the courſe of the ſummer. The ground ſhould be kept particularly clean from weeds, and rubbiſh of all kinds; and the hills ſhould be moulded twice in the courſe of the firſt year; the firſt time, in the middle of May, and the next, in the beginning of Auguſt. Here ends the firſt year's expence, and trouble.

In the courſe of the enſuing winter it will be neceſſary, to provide poles. If the hops be luxuriant, and ſtrong, two poles will be ſufficient for each hill, or two thouſand ſix hundred to an acre. But if the plantation be languid, and weak, every other hill ſhould have three poles; which will require 3250 to an acre. But, though the weakeſt plants will require the greateſt number of poles; yet, as they will not require them ſo long, or ſubſtantial, the expence of the poles will be nearly equal, in both caſes. The price of poles varies, of courſe, in different neighbourhoods, very conſiderably; but the medium price may be conſidered from fifteen to twenty ſhillings a hundred, at the ſtub, without reckoning their carriage.

When the poles are brought to the ground, they ſhould be unloaded at the outſides of the plantation, and carried upon men's ſhoulders to the places of poling.

No muck, or compoſt, is neceſſary for the ſecond year; but the ground muſt be dug in the autumn, in the ſame manner as it was the firſt year. In the month of

March every year, after the firſt year's planting, the hills muſt be opened, and the plants dreſſed, by cutting off the old, laſt year's bearing-ſtalks within two joints of the root; and if any of the plants have failed, or are found in a ſickly ſtate, others muſt be ſubſtituted in their ſtead. In doing of which care muſt be taken, to dig the earth ſufficiently deep about each ſtock, or root, that all defects may be diſcovered, and that there may be room to cut off all the old ſtalks. When the plants are thus viſited, and dreſſed, the earth ſhould be raked back upon them. The beſt of the prunings will ſerve for freſh plantations.

The general rule for poling is, when the binds have ſhot about two or three inches out of the ground. Three or four binds ſhould be conducted up each pole, and confined, by being tied with meadow-ruſhes, or ſedge, as before-deſcribed; which muſt be repeated three or four times, as occaſion may require. Sometimes, when the poles are long, and the plants vigorous, it is neceſſary to have a ladder to tie them on the top.

This buſineſs requires particular attention at the beginning of the ſummer. When ſhort and ſlender poles are ſet to a hill, where binds may happen to be exceedingly florid, and ſtrong, it will be worth while to remove them to another hill, where they are weaker, and to bring other poles which are ſtronger in their room. The expence is a mere trifle; and the advantage derived from this attention is often very conſiderable. All ſuperfluous binds ſhould be taken away, ſeveral times, in the courſe of the ſummer; except two only upon each hill, which ſhould be reſerved, to ſupply the place of ſuch as may happen to be injured, in being firſt led up the poles. Such injuries frequently happen, either by the buds being bruiſed, or their heads beaten off by wind, or other accidents, to which they are very liable in their tender infant ſtate.

Three hoeings, in a ſeaſon, are eſſentially neceſſary; in the beginning of May, June, and July; and at each hoeing ſome mould ſhould be drawn upon the hills, to keep the roots of the plants moiſt. They muſt likewiſe be once moulded, pretty early in the month of Auguſt; and if this be done ſoon after rain, it is the better; and therefore it may ſometimes be done, on this account, a little ſooner or later than the cuſtomary time. This is the whole which will be requiſite, till the crop be gathered.

As ſoon as the hops are ripe, and fit to pick, the poles are drawn with an *inſtrument* in moſt places, called a *pulling-hook.* Four ſkeps will be neceſſary for every acre; and four women, or children, may conveniently make uſe of one ſkep. If the weather be tolerably fine, they will be able to pick an acre in ten days, or a fortnight. From ten to fourteen hundred, to an acre, is eſteemed a good crop; but there are inſtances of twenty hundred being grown upon an acre; which, at five pounds a hundred, amounts to an hundred pounds an acre. But this ſeldom happens.

As ſoon as the hops are picked, they are carried to the kilns to be dried; and about five or ſix days after they are dried, it will be a very good time to bag them.

The beſt way of bagging is, to have a hole cut in a chamber-floor, or loft, to the juſt ſize of the bag; the mouth of which muſt be fixed to a frame, laid upon the floor, with the bottom part hanging ſuſpended below. A man then gets into the bag, with a heavy weight; which he keeps removing, to the place where he is not immediately treading. The cloſer they are preſſed into the bag, the better; becauſe they preſerve their colour, ſmell, and taſte, the more. A few hops are tied apart, in the four corners of the bag, for the convenience of removing them, as it were, with handles.

There are ſome neceſſary rules, to be

obſerved in reſpect to the duty; but as every cultivator of hops ought to be particularly inſtructed upon this head, it will be adviſeable for him, to have a real copy of the exciſe-law for his guidance.

Soon after the hops are picked, the poles ſhould be cleared of the binds, and ſet up in ſquare ſtacks, or piles. About thirty or forty poles ſhould be ſet to each corner, and each corner props its oppoſite. The four corners ſhould ſtand twelve feet apart, every way, at the bottom; and the tops of the piles ſhould unite, and be interwoven together, as cloſe as poſſible. Between the four corners below, there will be an open free paſſage, which, admitting a free circulation of air, will contribute greatly to the preſervation of the poles.

The binds, if got up perfectly dry, and laid under cover, will make tolerable fuel for coppers, ovens, and brick-kilns.

Although muck is to be omitted the ſecond year, it is abſolutely neceſſary, every year afterwards, in the proportion of twelve good cart-loads to an acre, well mixed, and incorporated together with fifteen loads of freſh, virgin-earth, for near twelve months before it is uſed. This is one thing which makes the culture of hops exceedingly expenſive; but the quantity here deſcribed is abſolutely neceſſary. Indeed it is the moſt material part. This compoſt ſhould be carried on the ground with ſmall carts (thoſe of three wheels drawn by one horſe are beſt) before the ground be dug in the autumn, and laid in ſmall heaps; and ſhould afterwards be incorporated with the mould ſurrounding each hill, at about the diſtance of a foot from it.

The old ſtock ought to be ſtubbed up, and renewed, every tenth or twelfth year; and it is moſt prudent, to break up a due proportion of the old, and to plant an equal quantity of new every year, or every other year, to keep up a regular ſucceſſion; and to do it by gradual expence, and labour. Another advantage ariſes from this method, *viz.* The oldeſt of the poles which, by long uſe, are rendered unfit for the old plantations, will nevertheleſs be exceedingly uſeful in the new ones, during the firſt and ſecond years. As to the duration of the poles, the beſt will not laſt above ſix, or eight years.

The whole expence attending this crop may be eſtimated as follows:

	£.	s.	d.
Medium price of an acre of land ſuitable for hops	1	10	0
Digging the ground	0	13	0
Dreſſing and pruning	0	8	0
Poling	0	15	0
Three hoeings	0	9	0
Once moulding	0	3	6
Tying the binds to the poles	0	12	0
Stripping the binds off the poles	0	3	0
Stacking the poles	0	4	0
Sharpening the poles	0	10	10
Manuring	2	0	0
Carried over	7	8	4

Brought

	£.	s.	d.
Brought over —	7	8	4
Picking, drying, and duty, at 1*l.* 10*s.* a hundred, the crop being eſtimated at twelve hundred to an acre — —	18	0	0
Bagging, and the occaſional expence of bags, about —	0	16	0
Aſh-poles eſtimated at 3250 to an acre, ſuppoſed to laſt eight years, medium price 18*s.* a hundred, at the ſtubb: the eighth part of which is, as nearly as need be calculated — —	3	13	0
Carriage of poles eſtimated at —	1	5	0
	31	2	4
Suppoſing twelve hundred to be grown upon an acre, and that the medium price is 4*l.* a hundred, the produce will amount to	48	0	0
And the expences deducted out of the produce, will leave a medium profit of — —	16	17	8

Sometimes, as I have before obſerved, a hundred pounds have been made of an acre of hop-ground; which accidental profit is apt to miſlead young planters, who very often promiſe themſelves more than they ought. It is likewiſe apt to induce ſome people to plant hops, upon ſoil ill calculated for their growth.

When the ground is perfectly ſuitable for the crop, and ſo ſituated as to command a ſufficiency of poles, hands for picking, and manure at a moderate expence; hops are certainly an object of great profit; and land being enriched, and at the ſame time perfectly cleaned, by their culture, is left in the beſt of all conditions for being laid down with graſs. But, as they require an infinite deal of attention, and ſo great a quantity of manure; when farmers cultivate them, except it be in the neighbourhood of towns, they do it to the ruin of all the reſt of the farms. This is very evident in the counties of *Worceſter*, and *Hereford*; where it is very common, for a farmer who occupies two hundred acres of land, to apply the greateſt part of his muck to the nouriſhment, and ſupport, of about ten or a dozen acres of hops, and to neglect every improvement upon thirty or forty acres of paſture-land, merely for the ſake of its producing him alder poles for his plantation; which paſture-land might often be doubled in value, if the alder-ſtools were extirpated, and the land properly drained. Farmers ſhould therefore be checked, when they aim at raiſing too great a proportion of hops, not only for the reaſons beforementioned, but becauſe the article is precarious in its nature; and when a failure happens, they are unable to diſcharge their rent. The regular produce of a farm brings more certain profits. In ſhort, the buſineſs of cultivating hops, and farming, is incompatible; each requiring conſtant attention.

OBSERVATIONS RELATIVE TO BUILDINGS AND REPAIRS.

THE firſt object in the management of an eſtate is, to diſcover and adopt all practicable modes of improvement upon the land. The ſecond relates to ſkill, and frugality, in the conſtruction of ſuch neceſſary buildings as the eſtate may require, and care, and contrivance, in their occaſional reparation.

The following general rules reſpecting new erections may be worth obſerving. "Not to build any thing but what will "be really uſeful. To build upon a ſmall "compact ſcale, and as much as poſſible "upon ſquares, or parallelograms, not in "angles, or notches. To build at all "times ſubſtantially, and with good ma-"terials. Not to lay any timber into "freſh mortar, becauſe the lime eats up,

" and waſtes, the ends of it long before
" the other parts decay; but to lay the
" ends into loam, or clay. Not to put
" any window-frames or door-caſes into
" new brick-work at the time the walls
" are carried up; but to introduce a diſ-
" charging-piece, or lintel, over ſuch door
" and window-ſpaces." The reaſon of the laſt caution is obvious; for as brick-work ſettles, ſoon after it is up, the window-frames and door-caſes, on account of their ſtrength, will not yield with it, but occaſion cracks and flaws; but when a lintel is made uſe of, the whole work ſettles regularly together, and door-caſes and window-frames may be then introduced, with more propriety than before.

With reſpect to materials, tiles or ſlate are the beſt covering for houſes; but barns and ſtables ſhould be thatched, becauſe workmen are always careleſs, in laying corn and hay into them, and generally puſh the tiles off with their prongs; and beſides, theſe buildings, when empty, collect a great deal of wind, which is apt to diſlodge them, unleſs they are pointed in the inſide, which encreaſes the expence conſiderably, and is never laſting. Reed is the beſt of all covering for barns, ſtables, cart-houſes, &c. There is a ſort of reed which grows in fens, marſhes, and wet-lands, ſo excellent for this uſe, that a moderate coat, if it be well laid on, will endure at leaſt half a century, with very little expence of reparation: and it is a fact beyond contradiction, that the timber uſed in roofing will laſt thirty years longer, when covered with reed, than it will when covered with tiles. The next beſt covering to this is the *Somerſetſhire-reed*; which is nothing more than the ſtrongeſt wheat-ſtraw which can be met with, combed clean from weeds, having the ears of the corn cut off, inſtead of being thraſhed, and ſo laid on upon the building in whole pipes, unbruiſed by the flail. This latter reed may be had in any other county, as well as *Somerſetſhire*, in ſufficient quantity; and it is abſurd, in the laſt degree, to make uſe of ſtraw for thatching in any other way, becauſe the difference of expence in the preparation is a mere trifle, compared with the difference of duration between the *Somerſetſhire-thatch* and that of other counties. The common, injudicious, ſlovenly practice of beating the ſtraw to pieces with the flail, and then laying it on with ſome of the ſeeds and many weeds in it, cauſes it very often to grow quite green, after it is laid upon the building; and, being bruiſed in all parts, to collect and retain the wet, much more than it would if the ſtraw were whole, and conſequently to become quite rotten in a few years. When ſtraw is deſigned for thatching, it is a good way to cut the corn rather earlier than ordinary.

With reſpect to the timber moſt proper for building, I know of none that is to be preferred to Spaniſh-cheſnut, where it can be had, becauſe it is very pleaſant to work, and as durable as oak, though it ſeldom bears the price of it. In maritime counties, where oak ſells well, and deals are tolerably cheap, it is beſt to diſpoſe of the one, and buy the other; becauſe oak is generally cut to waſte in moſt repairs, and deals may be bought, of any ſcantling that may be required.

In all paling, battoning, and other fences about the homeſtall, nothing is more uſeful than pollards; and they ſhould always be made uſe of on ſuch occaſions, becauſe they are generally the produce of the farm, of little value, and ſave better timber. Sometimes they are uſeful in ſheds, and ſmall buildings, for cattle. Bricks are a very conſiderable object, and great care ſhould be taken in getting them of a good quality. Upon moſt eſtates, of any conſiderable ſize, brick-earth, or clay, may be met with; and, where this is the caſe, they may be always made, and burnt in clamps, for one third leſs than they can be bought at the kilns, and equally good in quality. I have had a great number burnt in this manner, from eleven to fourteen ſhillings a thouſand, in *Norfolk*, *Hertfordſhire*, *Glouceſterſhire*, and *Worceſterſhire*. The medium price is twelve ſhillings a thouſand where fuel is reaſonable. Beſides the difference in price, there is generally a great ſaving in carriage, when gentlemen burn their own bricks.

No material in building requires greater inſpection than mortar, in which maſons are apt to be deficient. Two things are to be attended to; the quality of the different articles, and the manner of mixing them.

When new buildings are to be erected, it is eſſential, to chooſe the moſt ſheltered ſpot which can be pitched upon, conſiſtent with the ſituation of the land; becauſe it is prudent, to guard againſt tempeſts as much as poſſible, and becauſe young ſtock thrive much better in warm yards.

Farmers are never ſatisfied, with the number of buildings which are aſſigned them; they are particularly craving for a great deal of barn-room, which make the expence of repairs extremely heavy. Owners of eſtates ſhould therefore be governed by what is really neceſſary, and not led into ſuperfluous expence, merely by liſtening to a man who pleads his own cauſe only.

The moſt neceſſary buildings to a farm, beſides a convenient comfortable houſe, are good accommodations for cattle; ſuch as ſtable, cow-ſheds, calves-pens, and pigs-cots. Theſe may frequently be ſupplied by lean-to's, or otherwiſe built at a moderate expence; but barns, which are very expenſive, may often be contracted, and much unneceſſary charge ſaved. What ſhould be moſt recommended is, ſtacking; which ought to be done much more than it is. Wheat is certainly better preſerved in ricks, than barns; the air keeps it ſweeter, and it is more ſecured from vermin. Every barn ſhould be ſo contrived as to have a rick-ſtaddle at each end, and a hole a hole in each gable to pitch the corn into it. Upon ſmall farms, the barn need not conſiſt of more than a thraſhing-floor in the middle, and an equal ſpace at each end, juſt to receive the quantity contained in a ſmall rick.

When bricks can be burnt upon an eſtate, upon the terms I have before mentioned, nothing is to be preferred to them for barn, and ſtable-walls; but where they come dear, and timber is tolerably cheap, feather-edged boards, between the cills and wall-plates, are next to be choſen, and if tarred are very durable. As for ſtud-work, with brick-work between, or daubing, it is ſo much ſubject to accident, that it ſeldom laſts long.

All work, whether old or new, ſhould be ſet as much as poſſible by the jobb, for a fixed ſum; always ſubject however to inſpection and approbation when finiſhed.

No new coat of thatch, or covering of tiles, ſhould be put upon an old roof, not likely to carry it till it is worn out; nor any new roof upon old decayed walls.

In reparations two points ſhould be attended to, in preference to every other conſideration. The one is, to keep all the ground-cills, or foundations, conſtantly tight, to prevent the wall or upper part of the building from warping, or getting out of its perpendicular; the other is, to keep the thatch, or covering, at all times whole, to prevent wet from getting in to damage the timber.

When buildings are very old, and in bad condition, it is better to pull them quite down, than to be at much expence in patching them.

Tenants ought to find ſtraw for thatching, becauſe it is the growth of the farm; and to carry all materials for repairs gratis, becauſe their teams and carriages are ready on the ſpot, and they can often do it at leiſure intervals, without much inconvenience.

When farms are leaſed, the landlord generally engages to put them in repair, and the tenant to keep and leave them ſo. But eſtates, under this regulation, are very often neglected; for when the landlord is not called upon, it is very natural for him to be careleſs; and at the expiration of the demiſe, there is often a heavy unexpected charge brought on, for want of a little timely attention; and it ſeldom happens that a landlord can prevail on the departing tenant, to be at much expence in making good defects, and it is very unpleaſing to be obliged to compel him to do a thing by force. Conſtant attention not only reduces the expence of repairs, but brings them to a more regular and even charge. But as no exertion or aſſiduity whatever, in an owner, or ſteward, can be ſufficient to attend to every accident, that happens upon a large eſtate, it ſeems eſſentially neceſſary, that the tenant ought ſome-how to be intereſted in the preſervation of the buildings, as well as the landlord; becauſe as he is always on the ſpot, he can remedy a breach at the expence of a ſhilling, by taking it in time, which will coſt the landlord a guinea, by being neglected. He too, by being on the ſpot, can better attend to the workmen, to ſee that they do not idle away their time, when they work by the day. This obvious inconvenience has been effectually remedied by Mr. *Anſon*, upon his eſtate, under my care, in *Norfolk*, by agreeing with his tenants to allow them all reaſonable accommodations, and all neceſſary materials for repairs, but that they ſhall ſuſtain the moiety of all expences for workmen's wages, unleſs tempeſts, or accidents, ſhall bring the expence of ſuch workmanſhip, in any particular year, to more than ſix per cent. upon the rent; in which caſe the landlord pays the ſurpluſage. The ſaving has already been conſiderable; and as no tenants have a better landlord, nor any landlord a better ſet of tenants, they find mutual convenience, and ſatisfaction, in this regulation; as others may do, if they will imitate it.

THE DEFICIENCY OF TIMBER CONSIDERED.

THE decreaſe of timber, in this iſland, has been much complained of, and not without reaſon. A few years ſince, the government took this important object under conſideration. The Commiſſioners of the Navy, and many other perſons, were examined before a Committee of the late Houſe of Commons, as to the quantity, and condition, of the timber in general throughout the kingdom. The deficiency was clearly proved, but the remedy applied was no cure to the diſeaſe. Inſtead of planting, and protecting, the King's foreſts, and encouraging private perſons to promote the growth of timber, in order to keep up a proper ſucceſſion, a reſtraint was laid upon the Eaſt India Company from building ſhips of ſo large a ſize as formerly. This meaſure, inſtead of being of uſe, was a manifeſt diſcouragement to the growth of timber, becauſe it precluded the grower from carrying his commodity to any other market than the Navy; and as Government fixes its own price, no man, in future, can be expected to ſuffer his timber to ſtand beyond the ſize, which he has a right to diſpoſe of in what manner he pleaſes. Government undoubtedly ſecured all the timber then ſtanding, but effectually cut itſelf off from all farther ſupply; which it muſt ſeverely feel, in the long run.

It would perhaps have been better, though I ſpeak it with deference, that nothing had been done in this matter, than that a prohibition of this kind ſhould have been eſtabliſhed. A vaſt deal of growing timber will now be cut, at a ſmaller ſize than formerly; beſides that all reſtrictions which affect trade, or private property, in any ſhape, are impolitical, and odious.

I have taken the liberty, to preface my obſervations upon timber with this remark, merely to ſhew, that no regulation of Government is ſo likely to provide a remedy againſt the deficiency of timber, as the private attention of individuals; and therefore, great as the object before us is, nothing ſeems wanting, but to convince men, of landed property, of the great profits which reſult from planting.

That there is a deficiency of timber in this kingdom, particularly of oak, evidently appears from the proceedings of the ſaid Committee; and every man who has lately travelled much into the internal parts of the country, muſt be fully ſenſible of it from his own obſervation. It will therefore be needleſs, to add more to prove it, but eſſentially neceſſary, to adopt ſome eligible plan, for the future increaſe and preſervation of this uſeful commodity; which I ſhall endeavour to ſuggeſt in the following hints.

THE MOST USEFUL SORTS OF TIMBER CHARACTERIZED.

SINCE the modern faſhion of ornamenting country-ſeats, and villa's, has prevailed, almoſt every gentleman's attention has been taken up in that mode of planting; and many of them are apt to conſider themſelves as great planters, merely becauſe their habitations are ſurrounded with a thick margin; half the trees of which will never be of any national uſe. I do not however mean to inſinuate, that this method of planting has no merit, but that it is not the ſtyle of planting which this country requires; and that, while gentlemen attend to the embelliſhment of a few acres, they frequently neglect larger objects, upon ſuch parts of their eſtate as lie farther from home, and are more calculated for growing better ſorts of timber.

When real uſe only is conſidered, we ſhall find that a very few trees, in ſpecies, will be ſufficient to anſwer all our purpoſes.

The *oak* claims our firſt regard: its uſe is general, and eſſential; and though neceſſity might teach us to ſhift without other timber, this alone, when we conſider the importance of our navy, is what we cannot diſpenſe with, without feeling the greateſt inconvenience.

Aſh is perhaps the ſecond timber, in point of utility, though it be far from being held in univerſal eſteem. It has many enemies, becauſe the wet, which drips from it, is very noxious to moſt other plants. And as it ſhoots its roots horizontally, and pretty near the ſurface, farmers have a particular diſlike to it, becauſe it interrupts the plough; but when its extenſive uſe is conſidered for coopers, wheelwrights, coach-makers, carpenters, ſieve-makers, and ſome other trades; for hop-poles, hurdles, and many other purpoſes, no wood, except oak, could leſs be ſpared; and as its growth is quick, I do not know a more profitable one.

Elm is another noble ſort of timber, being uſeful for ſhipping, pipes for conveyance of water, millwrights, and carpenters uſes. There are many ſorts of it; but the moſt valuable are "*the ſmall-*" *leaved Engliſh elm*, and *the ſmooth nar-*" *row-leaved elm*, by ſome called *the up-*" *right narrow-leaved elm*." This tree once planted, is planted for ever, as it ſpreads itſelf aſtoniſhingly. It is the beſt of all trees in hedge-rows, becauſe it generally grows erect, does leaſt damage to fences, and will ſtand much cloſer together than any other. Some people are fond of it, merely becauſe it will bear lopping better than any other tree: but the common cuſtom of pruning is very deſtructive to the health of the tree, and injurious to the quality of the timber; and, where this practice prevails, is a great blemiſh to the appearance of a country.

Spaniſh cheſnut, ſometimes called ſweet cheſnut, may be claſſed among the moſt uſeful trees. In all purpoſes of building it is nearly equal to oak, and generally reckoned as durable. It is likewiſe pleaſant to work, and, where it reliſhes the ſoil, is quick in its growth. No timber deſerves our attention, and encouragement, more than this; it may be looked upon, with great propriety, as the oak's beſt ſubſtitute; ſince it anſwers many purpoſes where no other wood, except oak, would do.

Sycamore is uſeful for turners, and is beſides very profitable in ſtem-wood.

Beech is uſed for fellies of wheels, and by cabinet-makers, for making handles to a great many tools, and for firkins to hold ſoap; is a moſt elegant tree for pleaſure, and ornament, and pays extremely well upon dry chalky hills, which are little calculated for any thing elſe.

Abele, and *white poplar*, which are exceedingly quick in their growth, particularly when planted near a running ſtream, make good boards for ordinary repairs; and ſerve for the purpoſes of wheelbarrows, and the ſides of waggons and carts, and may be conſidered as an uſeful ſubſtitute to the aſh, in thoſe, and many other purpoſes.

Black poplar, *alders*, and ſeveral ſorts of *withe*, make uſeful rafters, poles, and rails; and planted in the manner hereinafter deſcribed, make a very quick return. The latter is likewiſe uſed by patten-makers, and ſometimes by turners; and where elm is ſcarce, it is often uſed for water-pipes.

Having, in a curſory way, run over the different qualities, and uſes, of the moſt neceſſary kinds of timber, and wood, I ſhall proceed to treat of them more particularly.

The firſt maxim in planting is, to make a judicious choice of ſuch trees as our ſoil will bear; which is beſt diſcovered by the trees themſelves, where any happen to grow upon it, otherwiſe the obſervation muſt be made upon ſome other ſoil, of a ſimilar nature, where they do grow.

The next maxim is, not to plant the ſort of tree which the neighbourhood is already ſtocked with, but *(vice verſâ)* thoſe of which there is the greateſt ſcarcity. This is a conſideration of great conſequence, though ſeldom much attended to.

If the ſoil be appoſite, and the country not over-ſtocked, or ſo ſituated as to admit of carriage out of it, give the preference to *oak*, *aſh*, *elm*, or *Spaniſh cheſnut*.

In maritime counties, and others, where there is water-carriage, there cannot be too much *oak*, or *elm* planted, let the neighbourhood be ever ſo much ſtocked; becauſe theſe ſorts, being uſeful in ſhipping, will always find a good market elſewhere, if not at home. With other timber,

ber, in ſome particular inſtances, a country may be over-planted, and injured by that means.

If all ſorts of timber be equally ſcarce, and dear, plant the quickeſt growers; and among theſe *abele*, *white poplar*, and *Dutch withe*, if the ſoil be moiſt, ſhould have the preference.

If coal be very dear, it may ſometimes anſwer, to plant merely for fuel; in which caſe *aſh*, *beech*, *ſycamore*, *maple*, and *hazel*, make excellent ſtem-wood upon ſound land; and *alder*, *black-poplars*, and *withes* of all ſorts, do well near brooks, rivers, or even upon boggy land.

When *furze* is ſcarce, it is not an unprofitable thing to plant even that, as it is very uſeful for ovens, and kilns. I know inſtances of ſix pounds an acre being made every third year, by this crop, upon land, for other purpoſes, not worth above five ſhillings an acre yearly.

In the neighbourhood of baſket-makers plant *oziers*; which are very profitable, and quick in their return.

In hop-countries plant *aſh*, and the *long-leaved withe* for poles.

The judicious planter will weigh all theſe different circumſtances, and make his own application; but, beſides all that I have obſerved, the price of each ſort of timber, as well as the quickneſs, or ſlowneſs of its growth muſt be conſidered, before a juſt diſcovery can be made, which is moſt profitable.

DIFFERENT METHODS OF PLANTING SUGGESTED.

EXPERIENCE ſhews, that thorns, and buſhes, are the natural nurſes of all foreſt trees, particularly of oak; and as theſe never grow high, we learn hence too, that oaks do not like any neighbour to over-top them, longer than is neceſſary to protect, and keep them warm in their infancy, till they get good root, and are able to expoſe their heads to the open air.

Obſervation will next diſcover, that trees, when they arrive at any conſiderable ſize, do beſt in plantations of their own kind only; *oak*, for inſtance, diſlikes the *aſh*, and ſeldom thrives well in its company. This teaches us, to make ſome inferior wood ſubſervient to that, which we ſet the greateſt value upon; ſo that it may anſwer the ſame end, to the better ſort, as thorns, and buſhes, do in a foreſt.

When large plantations are deſigned to be raiſed, the firſt buſineſs is, to clean a piece of land for a nurſery, ſufficiently large for the purpoſe required; which ſhould be ſecurely fenced round, and tolerably well ſheltered; but ſhould be of a poorer kind than is intended for the trees, when they are tranſplanted.

When the plantation is made, it is clearly the beſt way to plant the *oaks*, or whatever trees are deſigned for timber, at nearly the diſtance they are deſigned to ſtand forty years afterwards; and when any fail, to ſupply them occaſionally. This beſt ſort, deſigned for timber, ſhould be planted at the growth of about ſeven or eight feet high; and all the intermediate ſpaces ſhould be planted, at the ſame time, with more ordinary plants, ſuch as *ſycamore*, and *horſe-cheſnut*, at the diſtance of about two yards ſquare, and about half the ſize of the better ſort; which will be when they are about two or three years old. Part of theſe, as they advance in growth, ſhould be chopped down, to thicken the bottom, to keep the better trees moiſt, and warm. As they ſtill grow on, the remainder ſhould be chopped down, by degrees; which will make a very fine, and profitable *under-wood*, about the time that the better ſort of trees will want to ſpread their branches, and be clear above. This method of raiſing timber in plantations, muſt be allowed to be a nearer imitation of nature, than the common way of planting a variety of ſorts together, of equal age, ſuch as *oak*, *aſh*, *elm*, *beech*, *cheſnut*, and many others; and experience, the beſt of all evidence, has always proved it. The common method of planting has this great diſadvantage attending it—the planter has not the heart to cut down valuable trees, when the plantation wants thinning, though they ſtand too thick; and if he ſpare them at ſuch a criſis, he ſpoils the whole plantation;

but he would feel no remorſe at cutting down a *horſe-cheſnut*, or a *ſycamore*, to promote the growth of a better tree.

Round the borders of ſuch plantations it is highly proper to plant thorns, or furze, the width of twenty or thirty feet, to keep out all cattle, to interrupt diſorderly people from getting in, and to furniſh uſeful ſtuff, of this kind, for mending hedges, and other purpoſes which every farm ſtands in need of. In the middle, or at one corner of every large plantation, it is very proper to have a ſmall nurſery, that any dead, or ſickly trees may be replaced with greater expedition, and leſs expence, than they can be, when the nurſery is at a diſtance.

Theſe large plantations may frequently be made, upon land which lies waſte, and upon land lying at a diſtance from home. And leſs plantations, of a ſimilar kind, may be made upon almoſt every farm, in angles, nooks, pits, and corners, which are of very little advantage in any other way; becauſe, when ſuch parts are in tillage, they are difficult to plough, and when they are grazed, cattle are very apt to gore, and kick each other. *Aſh*, in particular, ſhould be confined to ſmall ſpots of this kind.

In the middle of every large grazing-ground a clump ſhould be planted, to afford ſhade and ſhelter for cattle; and to prevent their lying too much under the hedges, in hot weather, which damages the fences, and tempts them to break out. Beſides, cattle are more troubled with flies under a cloſe hedge, and have leſs benefit of the air than in an open grove. If the piece be very large, two or three clumps will be uſeful.

Hedge-row timber generally grows to the greateſt ſize; is of the beſt and ſoundeſt quality; and moſt calculated for the uſe of the navy. *Elm* is there to be preferred, becauſe it grows erect, and does leaſt damage to the land by its under-branches, and next to that, *oak*; becauſe it draws its principal nouriſhment from a tap-root, and therefore does not exhauſt the ſurface of the ground, like aſh, and ſome other trees, nor interrupt the plough by horizontal roots. Some inconvenience indeed will be ſuſtained, by ſhading the ground, but it will bear no proportion, to the profit which will accrue, from the increaſe in the growth, and value, of the timber. Hedge-rows, properly managed, afford a large field for planting; but, where this method of raiſing timber is practiſed, pollards ſhould be totally extirpated. They take up a deal of room, as much as the largeſt trees, utterly deſtroy all fences, and produce very little more wood, than would grow in the ſame ſpace from ſtubbs, or quickſet-ſtools. If there was only one tree planted, in the room of every pollard through the kingdom, it would very ſoon be ſufficiently ſtocked; and the difference in beauty and profit would be aſtoniſhing. If the cutting down of pollards ſhould be thought to leſſen the quantity of fuel, the under-wood in the nooks, angles, pits, and corners which I have recommended to be planted, will be more than adequate to the deficiency.

Before I take leave of hedge-row timber, I ſhall communicate a mode of planting it, which Sir *Charles Cocks*, at my recommendation, has lately adopted upon his eſtates in *Glouceſterſhire*, and *Worceſterſhire*. A clauſe is inſerted in every leaſe, to oblige each tenant, or occupier of a farm, yearly to plant, and properly protect, one tree to every ten pounds a year rent, or ten to a hundred a year rent, and ſo in proportion, on ſuch parts of their reſpective farms as are pointed out to them for that purpoſe. The expence to the tenants is a mere trifle, as the trees are provided for them in an adjoining nurſery; and, where leaſes are granted, they very cheerfully conſent to it. By this eaſy method, upon a large eſtate like his, the quantity of timber, thus imperceptibly raiſed, will be very conſiderable, even in the courſe of a twenty-one years leaſe. Upon every thouſand pounds a year there will be two thouſand one hundred trees in number, at the end of the leaſe; becauſe, if any fail, the tenants plant, the next year, a greater number. And if we ſuppoſe theſe trees to pay only three pence a year each, during the demiſe, which is a moderate calculation, they will be worth, at the expiration of the leaſe, 288 *l.* 15 *s.* and from that period will begin to pay at leaſt ſix pence a tree yearly. This ſcheme of planting is certainly practicable, upon every eſtate, if a landlord will give his tenants a reaſonable bargain in their land, and leaſes for their encouragement.

I ſhall mention one other method of planting, which is productive of much improvement, *viz.* to appropriate wet, and boggy, lands to this uſe, inſtead of devoting them to paſture; in which caſe they frequently give cattle the rot, and are often dear at a crown an acre. But, planted with ſuitable aquatic woods, they yield an immediate profit of fifteen, or twenty ſhillings an acre yearly, and carry on an increaſing gift to poſterity, which will be of as much value, in fifty years time, as the fee ſimple of the land, before this improvement was made.

The beſt way of planting this ſort of land is, by digging the whole of it a foot deep, inverting the turf, and afterwards opening trenches, which ſhould have a free diſcharge, at one end, into ſome more capital drain, or outfall. Theſe trenches ſhould be eighteen feet apart, three feet deep, two feet and an half wide on the top, and one foot wide at the bottom; and all the ſtuff, which comes out of theſe trenches, ſhould be thrown upon the tops of the beds, which will help to raiſe them. At the ſame time, a row of holes ſhould be opened in each bed, at about eighteen feet apart, eighteen inches deep, and three feet diameter on the tops. This ſhould be done early in the winter, that the froſt may get into the ground, and chaſten it. Early in February, the ſurface of the beds ſhould be chopped with ſpades, and made as fine as poſſible. And about the latter end of the ſame month, *white poplar*, or ſome other ſuitable trees, ſhould be planted in the before-mentioned holes, and all the intermediate ſpaces upon the beds ſhould be filled up, with withe, or ozier-ſets. If with the former, they ſhould ſtand at four feet ſquare, if with the latter, at only thirty inches. The firſt will make hop-poles, and may be cut every ſixth, or ſeventh year; the other may be cut every year, for the uſe of baſket-makers. The ſets, when planted, ſhould be about the ſize of a man's thumb; and ſhould be cut with a ſloping point at both ends, juſt above, and juſt below a knot, or bud. They ſhould be about two feet long; one half ſhould be puſhed into the ground, and the other ſtand out.

Some people plant beds of *aſh* in this way; and if the beds be laid tolerably dry, it generally flouriſhes in ſtems exceedingly well, and makes the beſt of hop-poles, and cooper's ſtuff. I have ſeen ſome, which were planted a few years ſince near *Sudbury*, in *Suffolk*, upon a common horſe-moor, which flouriſh ſurprizingly; and I was told, by a proper judge in the neighbourhood, that land ſo planted was honeſtly worth thirty ſhillings an acre yearly. On a dry bank of land planted at the ſame time, in the ſame piece of ground, I obſerved that the *aſh* was not by above a third ſo good as that on the boggy part.

ADVICE RESPECTING THE MANAGEMENT OF TIMBER.

NO trees ought to be diſmembered of their branches, without abſolute neceſſity; ſuch treatment is very prejudicial to all ſorts of timber. But where trees hang over roads, and buildings, it cannot ſometimes be diſpenſed with. Where this happens, the limbs ſhould be taken off cloſe to the tree, and the place where it grew planed quite ſmooth, that the wet may not hang upon the part. If the tree be young, and thrifty, the wound will quickly heal, and the blemiſh be covered; but when trees are hacked in the branches, and left jagged, the wet hangs upon them, and, by degrees, rots them quite into the heart.

Thinning timber is a very eſſential part, of the care it requires. Grove-timber, and thick plantations generally ſtand in need of ſome attention of this ſort. The firſt rule is, to thin it early; the ſecond, to do it by degrees; and the third and principal rule of all is, to take Nature for our guide, and clear away ſuch trees only as ſhe points out; namely, the unhealthy trees; without paying any great regard to regular diſtances.

When theſe rules are not obſerved, the bad conſequences are obvious. Trees, in thick plantations, when left any conſiderable time before they are thinned, get too long in their bodies, for the ſize of their heads; and when a freſh current of air is let in upon them, the ſap is immediately chilled, and the trees checked in their growth. But if they are thinned early, and at different times, they are hardened by degrees, and their branches expand regularly, and preſerve a due proportion with their bodies. If trees be taken promiſcuouſly, or ſo as to leave the remainder at equal diſtances, nearly the ſame inconve-

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nience ariſes as in the former caſe; for there will be a variety of tender parts, which cannot be perceived at the time of doing it, left unguarded; but if the ſickly trees be taken, the others will immediately receive great benefit.

The obvious ſigns of health in timber are theſe:—The bark will be ſmooth, look clean, and grey in colour, and the freſh ſhoots will be long, and ſtraight, and free at the points. The colour of the green will be much deeper, than that of thoſe trees, of the ſame ſort, which are not healthy; and the trees will retain their leaves longer in the autumn. The marks of unhealthy timber are nearly the contraſt of the former. The tree will be hide-bound, the bark rough, cloſe, and thick, and often covered with moſs; the freſh ſhoots will be very ſhort, and crooked at the ends. The green will be of a paler colour, and the leaves will drop ſooner. An unhealthy tree ſhould never be ſuffered to remain in any plantation, but ſhould be taken down, as ſoon as it has done growing, let its ſize be what it will; and a young plant ſet in the vacancy.

Some gentlemen, who have not ready money, are diſcouraged from planting, becauſe the expence is immediate, and the profit at a diſtance. At the ſame time, perhaps, they have a great deal of timber ſtanding on their eſtates, which gets worſe every day, and leſſens in value, which they do not chooſe to cut, for fear the world ſhould think them needy. Other gentlemen let their timber ſtand, till it rots on the ground; thinking it highly reputable to have a large quantity of old timber on their eſtates. Both theſe overlook their own intereſt. The public, and private good requires, that all timber ſhould be taken down as ſoon as it gets to perfection; and a regular ſucceſſion kept up by young plantations. The man who acts upon this plan, acts rationally; and if he be young, or even middle-aged, he may live to cut down the greateſt part of the old timber, which he finds upon his eſtate, put money in his pocket, and leave his eſtate better ſtocked with timber than he found it. And what is more material, perhaps, with many a young gentleman, he will avoid the diſgrace of cutting down, which is apt to imply want, when the world perceives that his ſchemes, upon the whole, are more calculated for the growth, and increaſe of timber, than its deſtruction, or diminution.

In ſhort, the true way of managing a timbered eſtate is, to make uſe of what Nature has brought to perfection, and to keep up a regular, uniform ſucceſſion; ſo that at the time we take one egg from the neſt, for our own uſe, we may leave another, as a neſt-egg, for the benefit of poſterity.

Senſible of the importance of this plan, Mr. *Windham*, of *Felbrigg* in *Norfolk*, has done me the honour of approving, and adopting it in its full extent; and has impowered me to carry it on upon ſuch a vigorous ſcale, as will gradually ſwell the quantity, and value of his timber, notwithſtanding his falls will be conſiderable every year. I am perſuaded, that any other gentleman who follows the example, will find his account in it.

For theſe, and many other uſeful hints upon planting, and the management of timber, I am particularly indebted to Mr. *Willes*, of *Aſtrop* in *Northamptonſhire*, Mr. *Gilbert*, of *Cotton* in *Staffordſhire*, and Mr. *Marſham*, of *Stratton* in *Norfolk*, who have made noble improvements upon their reſpective eſtates; and poſſeſs more knowledge, and ſkill, in the cultivation of timber, and other wood, than any gentlemen I have ever converſed with upon this important ſubject.

ADVANTAGES RESULTING FROM SMALL FARMS, AND THOSE OF THE MOST PROFITABLE SIZE DESCRIBED.

EVERY ſpeculative Engliſhman who travels through the *Auſtrian Netherlands*, is aſtoniſhed at the great population of that country, and at the ſight of the markets, which are plentiful beyond deſcription. Upon enquiring into the internal ſtate, and regulation of the country, he finds that there are no large farms, no claſs of men who paſs under the character of gentlemen-farmers, acquiring large fortunes merely by ſuperintending the buſineſs of farming; but that the whole country is divided, into much ſmaller portions than land is with us, and occupied by a ſet of laborious people, who, in general, work for themſelves, and live very much upon a footing of equality.

This ſeems a preſumptive proof, that agriculture, when it is thrown into a number of hands, becomes the life of induſtry, the ſource of plenty, and the fountain of riches to a country; but that monopolized, and graſped into few hands, it muſt diſhearten the bulk of mankind, who are reduced to labour for others inſtead of themſelves; muſt leſſen the produce, and greatly tend to general poverty.

I ſhall not attempt wholly to account for the amazing, increaſed, price of proviſions with us. There are, undoubtedly, many cauſes which contribute to it; but it is very evident that no ſingle cauſe affects it, ſo much as the deſtructive practice which has prevailed, for near half a century back, of demoliſhing ſmall farms. This abſurd cuſtom, which is not without its advocates, draws its birth from ill-digeſted calculations; is attended with great cruelty to individuals; and ends in conſiderable private loſs, and public calamity.

The ſpecious inducements are, to avoid trouble, to ſave expences in repairs, and to ſecure the rent by having more capital tenants.

Granting theſe arguments the utmoſt weight they deſerve, they will appear very inconcluſive, and unſatisfactory.

With reſpect to trouble, thoſe who manage their own property, have their own reward, and ſatisfaction in all they do. And a ſteward, or agent, ought to think nothing a trouble, which is conducive to the good of his principal's eſtate.

The ſaving in repairs ſeems, on the firſt view, to carry greater plauſibility; but, when all ſubſequent conſequences are duly inveſtigated, it will be found very inadequate to the loſs, which will be ſuſtained in the end.

There is no poſſibility of forming an exact eſtimate, of the expence of keeping an eſtate in repair. It varies greatly in the different price of labour, and materials,

rials, and ſtill more in the different ſkill, and attention, which is beſtowed by the perſon, who has the care, and direction of the work. But from great experience, and attention, I have obſerved, that large farms being once put in good repair, may be kept ſo, upon an average one with another, at about ſeven, and ſmall farms at about ten per cent. (fire and tempeſts excepted) and if we extend it to eleven, upon ſmall farms, for their greater proportion of accident, the buildings being more numerous, we ſhall be ſure to make a calculation that will not deceive us.

Admitting this, there appears to be a ſaving, by large farms, of forty pounds a year, upon an eſtate of one thouſand pounds a year. But, on the other hand, it muſt be allowed by every candid perſon, that ſmall farms let every-where for, at leaſt, fifteen per cent. more than large farms; and that induſtrious tenants upon theſe ſmall farms are enabled to give this difference, by doing the chiefeſt part of the work themſelves; by their greater frugality in living; and by availing themſelves of a variety of little advantages, which the great farmer will not ſtoop to pick up. Therefore after deducting the four per cent. ſaved upon repairs, from the fifteen per cent. difference in the ſcale of rent, it appears that there is an actual loſs of eleven per cent. or one hundred and ten pounds a year upon every thouſand pounds a year, and ſo in proportion for a greater, or leſs eſtate. As to the better payment of the rent, there are always induſtrious, and ſafe, tenants enough to be gotten, if care be taken, and proper encouragement given.

The landlord indeed is ſometimes in a ſituation, from which he cannot eaſily extricate himſelf. His buildings, by degrees, being diminiſhed, for want of a little timely care, and charge, he finds himſelf, in a manner, obliged to let his property in large lots, ſometimes perhaps contrary to his inclination; and is thereby by deprived of the advantage, he would otherwiſe have had, in a greater choice of tenants. But, whether this inconvenience deſcended to him, or has been created by him, it is his duty, and intereſt, to remedy it as ſoon as poſſible. For, if his farms be ſmall, he will have many more offers, becauſe ſmaller capitals will be required to ſtock them; but, if his farms be large, the number of good tenants, poſſeſſed of money enough to ſtock them, will be very few, comparatively ſpeaking; and theſe few will have it more in their power, to effect combinations, and keep down the real value of land, which is often the caſe in many parts of England.

Upon theſe accounts, not to mention others, the calculation ſeems totally erroneous, which ſuppoſes the balance of intereſt to the landlord, to be in favour of large farms. And motives of a different kind are not wanting to diſcountenance their extenſion.

Thoſe who contribute towards the deſtruction of ſmall farms, can have very little reflection. If they have, their feelings are not to be envied. Where this has been the practice, we ſee a vaſt number of families reduced to poverty, and miſery, the poor rates much increaſed, the ſmall articles of proviſion greatly diminiſhed in quantity, and number, and conſequently augmented in price.

A poor widow, left with a young family, will ſtruggle very hard to keep her children from the pariſh, when ſhe is in poſſeſſion of a ſmall farm, or a dairy, and will teach them the way to be induſtrious betimes; but if ſhe be deprived of the means of ſupport, her ſpirits are broken, and ſhe and her children ſink at once into poverty, and become burthenſome to themſelves, and the public. This is too commonly the caſe; for as ſoon as the little ſchools of induſtry are graſped, into the hands of an over-grown, rapacious farmer, the former occupiers are, at once, all reduced to the ſtate of day-labourers:

and when their health, or ſtrength fails, there is but one reſource; they, and their children, are thrown upon the pariſh. This has undoubtedly ſwelled the rates, to their preſent enormous height, more than any cauſe whatever.

The mechanic, and manufacturer, next feel the blow. The market wears a different face. The vaſt number of poultry, the quantity of pork, and a variety of other ſmall articles of proviſion, are no longer ſupplied in their former abundance. The great farmer raiſes no more of theſe, than are neceſſary for his own conſumption; becauſe his wife, and children, will not take the trouble, and care of them, or condeſcend to attend the market, like the wives, and children, of little farmers. His views are formed upon a large ſcale, and every thing flows from him in a wholeſale channel. And as no man can execute any very extenſive buſineſs, ſo well as that which lies in a more contracted ſpace, he muſt, when he has a great deal upon his hands, neglect many ſmall objects, partly for want of time, and partly becauſe they appear trivial in their nature: and many trifles added together, make a large deficiency upon the whole.

The caſe is different upon the ſmall farm. Here the tenant's great dependance reſts upon trifies merely; and therefore it behoves him to make the moſt of every thing. As he has no great ſpace to ſuperintend, it lies under his eye at all times, and ſeaſons; he ſeizes all minute advantages; cultivates every obſcure corner; generally accumulates more manure in proportion to his land; and conſidering his animal as well as vegetable produce, has likewiſe in that a greater proportion.

He does great part of his work with his own hands; and every man works more chearfully, zealouſly, and diligently for himſelf, than for another. His wife and children are likewiſe of great ſervice to him, eſpecially if his gains depend much upon a dairy. And, in general, the children of theſe little farmers prove the moſt uſeful people the country produces. The girls make the beſt dairy-maids; the boys the beſt gentlemen's bailiffs; the beſt head-men in larger farms; the beſt perſons to ſuperintend, and manage cattle; and, in a word, the moſt regular ſervants, in moſt capacities.

Having ſaid thus much of large and ſmall farms, I ſhall venture to deſcribe the ſizes, which I think would be moſt conducive to public, and private, benefit. And in doing this, I wiſh to avoid an extreme; for though a reduction be eſſentially neceſſary, it ought not to be made upon too low a ſcale; becauſe I am convinced, that the nature of our ſoil will not admit of that *univerſal plan*, of farms ſo low as twenty, and thirty, acres, which ſubſiſts in *Flanders*. For though it be our intereſt to imitate them, I wiſh not to copy them exactly. It is undoubtedly proper, and beneficial to a country, that farms ſhould vary in their ſize, as much as poſſible; but, in my opinion, which I deliver with deference, the higheſt ought not to exceed a hundred and ſixty pounds a year. But though there ſhould be ſome of theſe, to promote emulation, to reward particularly-induſtrious men, and to employ a middling *capital*; yet their number ſhould be inconſiderable, in proportion to the number of ſmaller ones. As I have mentioned an hundred and ſixty pounds as the yearly value of the higheſt farms, I think it right that none ſhould be under thirty pounds; and that from thirty to fourſcore, the number ought to be much greater, than of the largeſt ſort; to enable induſtrious ſervants, who have ſaved their wages, or whoſe good conduct entitles them to credit, to eſtabliſh themſelves, oftener than they do, in buſineſs; and likewiſe to afford ſettlements, for the children of greater farmers to begin the world with. Farms, varied in their ſize, between theſe lines, would have an excellent effect, as they would aſſiſt, and tally with each other, more than they now do; for they would have, almoſt every one, ſomewhat of a different object in view. Many of the ſmalleſt farms would breed cattle to more advantage, than they could fat them; and others would fat them with more convenience, than they could breed them.

Upon an eſtate of one thouſand pounds a year, I wiſh to ſee ſomething like the following proportion: One farm of 160*l.* one of 120*l.* one of 100*l.* two of 80*l.* two of 60*l.* two of 50*l.* three of 40*l.* and four of 30*l.* each. Here would be ſixteen farms, upon a thouſand pounds a year, which would be a profitable diviſion to an owner, and to the public. But, inſtead of this, the generality of eſtates of 1000*l.* a year, do not ſupport a third part of ſixteen families. And I will venture to aſſert, that the poor rates will be much higher in the latter, than in the former mode of allotment; becauſe a great many families, which would get a decent livelihood upon the farms of 30*l.* 40*l.* and 50 *l.* a year, come to the pariſh, as I have before obſerved, when they are deprived of this method of ſupporting themſelves.

If large eſtates were divided, in a manner ſomewhat ſimilar to the preceding plan, it would be a means of cruſhing another real grievance, which at preſent ſubſiſts, *viz.* the exorbitant price put upon land, by the owners of ſmall eſtates. A great farmer often lets a ſmall bargain, which he has picked up, in the ſame pariſh where he rents a large eſtate himſelf, at the proportion of one third more than what he gives his own landlord. If theſe little places were in greater plenty, and let by gentlemen of fortune at only fifteen, or even twenty per cent. more than their large farms, the more inconſiderable owners of eſtates would not be able to obtain their preſent exorbitant terms; but, while thoſe places are ſo few in number, people who are in abſolute want of them, muſt give whatever is aſked for them; and the rent is often ſo high, that induſtry itſelf cannot get a livelihood upon them.

The better regulation of this important concern, affords an extenſive field, in which gentlemen of fortune may laudably exerciſe their talents, of every kind; and, upon reflection, they muſt be convinced, that it is the number of uſeful inhabitants, that ſtamps a high value on land, which has no intrinſic value in itſelf; and that when theſe inhabitants decreaſe, the land muſt proportionably ſink in value. Their intereſt therefore is inſeparably connected with the comfort, and proſperity, of the people, where their eſtates are ſituate; and when they lend an hand to the depopulation of a country, they ſink, at the ſame time, the value of their own property.

There are, however, two very material points to be attended to, by every perſon, whoſe humanity, and liberal mind may induce him to adopt this plan, for the regulation of his property.

The one is, to make choice of induſtrious tenants; ſuch as have been bred up in farm-houſes, or country-buſineſs from their infancy; whoſe hands have been accuſtomed to labour. There are always enough of theſe to be found. But great care muſt be taken, not to accept of idle fellows, who have been bred to little trades. Such people are very deſirous of getting into ſmall farms, and wanting the judgment, and induſtry which the others have, generally ruin themſelves, and bring theſe little places into diſrepute.

The other point is, to contract old buildings, in proportion to the ſize of the farm; and when new erections are made, to build upon a ſmall, ſuitable ſcale; for too much building augments the expence of repairs conſiderably, and does the tenant no real kindneſs.

I ſhall quit this ſubject, with an anxious wiſh, that the deſtructive practice of engroſſing farms, may be carried no farther; and as the ſtab already given to plenty, and population, has greatly affected the proſperity of this country, I hope ſome reparation will be made for the injury ſuſtained.

THE

THE GREAT BENEFIT OF CHURCH AND COLLEGE TENURES TO POPULATION AND SOCIETY.

ESTATES held under eccleſiaſtical lords, collegiate, and corporate bodies, are at this time one of the greateſt ſupports this country has for its population. Notwithſtanding little farms are engroſſed, and cottages demoliſhed upon other eſtates, theirs, from the nature of the tenure, ſtill remain nearly the ſame; and continue to yield their proportion of that advantage, which this country formerly derived from ſmaller farms than now ſubſiſt.

Upon manors where any of the before-mentioned bodies preſide, a life no ſooner drops, in an eſtate held under them, than they are ready to fill up the vacancy, in favour of the heirs of its former poſſeſſor;

for having only a life-intereſt in it, or perhaps not ſo much, as preferment often removes them, they are glad to ſeize all immediate benefits which accrue, and never look forward, like a lay-lord, to the future advantage which his family may acquire, by waiting for the reverſion after the exiſting lives. For theſe reaſons, upon manors of this ſort, population muſt, and does wear a better face, than in other diſtricts.

When a man is a copyhold, or a life-leaſehold tenant, it gives a ſtronger ſpur to his induſtry, than when he is tenant at will, or on a ſhort term of years, to the ſame quantity of land. He will be encouraged to undertake improvements, and will obtain a much greater produce. He will alſo be better enabled to marry, and much encouraged to do it; becauſe he has the means to ſupport a family, and to make ſome proviſion for them, in caſe any accident ſhould happen to himſelf.

When young women are left with little eſtates of this ſort, they are the better enabled to provide themſelves ſuitable huſbands.

Theſe eſtates, preſerving their original form more than any other, and being, in general, of a ſmall ſize, produce more poultry, pigs, and dairy-articles, than larger eſtates; and are much more beneficial to the community. Many gentlemen of landed property are ſo fond of freehold, that they affect to deſpiſe every other tenure; and I have heard ſome lament, that there was ſuch a thing exiſting as copyhold, or leaſehold. Such perſons are generally the greateſt advocates for large farms: but if theſe were to prevail univerſally, we ſhould ſoon feel the dreadful conſequence; for then every ſource of plenty would be checked, and population receive an irrecoverable blow.

Since little farms have been ſwallowed up in greater, there are thouſands of pariſhes which do not ſupport ſo many cows as they did, by fifty or ſixty in a pariſh; and the inhabitants have decreaſed in proportion. If church and college-tenures were ſet aſide, this devaſtation would ſpread the wider.

Theſe tenures, and all copyholds under lay-lords which are not liable to revert, have another advantage. They are purchaſed at a ſmaller price, compared with freehold, which makes it eaſier for a man of a ſmall capital, to procure an inheritance; and as the title is always clear, this is another great recommendation of them.

The good effects I have enumerated, which flow from copyhold, and leaſehold tenures, ſhew the benefits reſulting from ſmall farms, in a very ſtrong light; and thoſe who perſiſt in the ruinous practice of throwing too much land into one man's hands, are blind to their own intereſt, and deaf to the cries of humanity.

REFLECTIONS ON THE GREAT IMPORTANCE OF COTTAGES.

ESTATES being of no value without hands to cultivate them, the labourer is one of the moſt valuable members of ſociety: without him, the richeſt ſoil is not worth owning; his ſituation then ſhould be conſidered, and made at leaſt comfortable, if it were merely out of good policy. There is certainly no object ſo highly deſerving the country gentleman's attention; his intereſt, and his duty equally prompt him to do all he can, to place him upon a better footing than he is at preſent.

The firſt point to be taken under conſideration is, the ſtate of the cottages, which theſe uſeful people inhabit; and next, how far their condition can be improved, by better regulation.

The ſhattered hovels which half the poor of this kingdom are obliged to put up with, is truly affecting to a heart fraught with humanity. Thoſe who condeſcend to viſit theſe miſerable tenements, can teſtify, that neither health nor decency can be preſerved in them. The weather frequently penetrates all parts of them; which muſt occaſion illneſs of various kinds, particularly agues; which more frequently viſit the children of cottagers than any others, and early ſhake their conſtitutions. And it is ſhocking, that a man, his wife, and half a dozen children ſhould be obliged to lie all in one room together; and more ſo, that the wife ſhould have no more private place to be brought to bed in. This deſcription is not exaggerated, offenſive as it may appear. We are all careful of our horſes, nay of our dogs, which are leſs valuable animals: we beſtow conſiderable attention upon our ſtables and kennels; but we are apt to look upon cottages as incumbrances, and clogs to our property; when, in fact, thoſe who occupy them are the very nerves and ſinews of agriculture. Nay, I will be bold to aver, that more real advantages flow from cottages, than from any other ſource; for, beſides their great utility to landed property, they are the greateſt ſupport to the ſtate, as being the moſt prolific cradles of population.

Cottagers are indiſputably the moſt beneficial race of people we have: they are bred up in greater ſimplicity; live more primitive lives, more free from vice and debauchery, than any other ſet of men of the lower claſs; and are beſt formed, and enabled to ſuſtain the hardſhips of war, and other laborious ſervices. Great towns are deſtructive both to morals, and health, and the greateſt drains we have; for where many of the lower ſort of people crowd together, as in *London*, *Norwich*, *Birmingham*, and other manufacturing towns, they are obliged to put up with bad accommodation, and an unwholeſome, confined air, which breeds contagious diſtempers, debilitates their bodies, and ſhortens their lives. Since therefore it is apparent, that all ſuch towns muſt cauſe a diminution, or waſte of people, we cannot be at a loſs to trace the ſpring, which feeds theſe channels. The country muſt be the place; and cottages, and ſmall farms, the chief nurſeries which ſupport population.

I am far from wiſhing to ſee the cottage improved, or augmented ſo as to make it fine, or expenſive; no matter how plain it is, provided it be tight and convenient. All that is requiſite, is a warm, comfortable, plain room, for the poor inhabitants to eat their morſel in; an oven to bake their bread; a little receptacle for their ſmall beer, and proviſion; and two wholeſome lodging apartments, one for the man and his wife, and another for his children. It would perhaps be more decent, if the boys and girls could be ſeparated; but this would make the building too expenſive, and beſides, is not ſo materially neceſſary;

for the boys find employment in farm-houſes at an early age. For the better explanation of what I mean, I ſubjoin plans, elevations, and eſtimates of two ſorts of cottages; and as elm, and oak-pollards are of little value in many countries, and may often be converted into ſcantlings, ſuitable to, at leaſt, half the purpoſes of ſmall buildings of this ſize, I have likewiſe ſhewed the difference in the expence, between erecting them with brick, and wood: conſidering pollard-timber at ſix pence a foot, and deal (of which the greater quantity will be required) at fifteen pence, which are fair prices for them in moſt counties. Theſe eſtimates which I exhibit, will, of courſe, vary a little in every neighbourhood; but as it cannot be any thing conſiderable, I ſhall calculate upon them as at a medium price. The ſmalleſt of theſe cottages, built of brick and covered with tile, amounts to ſixty-ſix pounds; the other, of the ſame ſize in wood, covered with tile likewiſe, to fifty-eight pounds. As the buildings will be quite new, built of good materials, and likely to laſt a great many years, and the eſtate where they are built, will be very conſiderably benefited, by having good labourers planted upon it; the landlord ought to be ſatisfied with four per cent. intereſt for his money; which will be, 2*l.* 12*s.* 9*d.* rent for the brick cottage, and 2*l.* 6*s.* 5*d.* for the wooden cottage. To each of theſe comfortable habitations, ſhould be added half an acre of land, at the ſame rate which the farmers give; we will ſuppoſe this to be eighteen ſhillings an acre. This would bring the whole rent to 3*l.* 1*s.* 9*d.* for the former, and 2*l.* 15*s.* 5*d.* for the latter cottage. This quantity of land would be of great uſe to a poor family, in the produce of a little fruit, and vegetables of different ſorts, and would aſſiſt them likewiſe in keeping a pig; as they might, and would raiſe more potatoes, and carrots, upon ſuch a ſpot, than would be ſufficient for their own conſumption.

The larger ſort of cottage, which may ſometimes be preferred, will coſt, when built of brick and tiles, 70*l.* and when with wood, 66*l.* 10*s.* Theſe might be appropriated to the uſe of labourers of the moſt induſtrious diſpoſition. And as it would have an excellent effect, to make ſome gradation among cottages, as well as farms; it would be highly proper, and uſeful, to lay (beſides the half acre of garden-ground) a ſmall portion of paſture-land, of about three acres, to each of theſe laſt cottages, to enable the occupiers of them to ſupport a cow; which would be a real comfort to their families, as milk is the natural food of children. If we value theſe three acres and an half of land at a guinea an acre, upon an average, and add it to the rent of the houſe, it will bring the rent of the former to 6*l.* 9*s.* 6*d.* and the rent of the latter to 6*l.* 6*s.* 9*d.* The value of the cow, if her produce were even ſent to market, would at leaſt amount to four pounds; but being uſed in the family, would, with the aſſiſtance of the garden, enable them to keep a ſow, or two ſtore-pigs, which would, at leaſt, double the market-price. As one acre or more of this ground might be mowed every year, for hay, the cow might be kept in good order with this quantity; and it would be better worth a cottager's while, to give this rent for ſuch a lot of land, than to truſt to the precarious advantage of a common, which always ſtarves his cow in the winter. If it ſhould be alledged, that there is not one cottager out of twenty who can afford to buy a cow; this difficulty may be eaſily obviated, by the landlord's letting him a cow, as well as the land, in the manner that dairies are generally let.

This would be dealing with the poor as we would wiſh to be dealt with ourſelves, in a ſimilar ſituation: but inſtead of this, cottagers are chiefly left by gentlemen to the farmer's diſpoſal; and when they are accommodated with a ſmall quantity of land, are obliged to pay, at leaſt, a double proportion of rent for it, to what the farmers pay themſelves.

Warm cottages, of this ſort, would require much leſs fuel, than thoſe in the preſent ſtyle, which is a very conſiderable article to a cottager.

The next conſideration is, to chooſe a convenient ſituation for cottages. Great farmers are very unwilling to admit them cloſe to their farms; and nothing is more common, than for a poor labourer to be obliged to come a mile, and ſometimes more, to his labour, and return home again at night, in all kinds of weather, after he has done a hard day's work. Cottages ſhould therefore be erected, if poſſible, on ſome ſheltered ſpot, near the farm where the labour lies; and true policy points out, that every farm ought to have a ſufficient number of ſuch uſeful appendages, in proportion to its ſize. Such cottages, under ſome ſuch regulations as theſe, would be of great uſe and ornament to a country, and a real credit to every gentleman's reſidence; as, on the contrary, nothing can reflect greater diſgrace upon him, than a ſhattered, miſerable hovel at his gate, unfit for human creatures to inhabit. Upon encouragement like this, good tenants would never be wanting. Induſtry would meet with a reward, the poor rates would neceſſarily be lightened, and population increaſed. A farm thus provided, with ſuch a ſufficient number of labourers as might, at all times, and ſeaſons, be depended upon, would be of more value on that account. The tenant of ſuch farm would not be ſubject, to pay exorbitant wages, as he otherwiſe muſt, on particular occaſions. He would not be obliged to court the vagrant, or to lend him a precarious aſſiſtance, to have recourſe to towns, to pick up diſorderly people. In ſummer, beſides the uſual buſineſs of hay-making, he might employ even the women, and children, in weeding, and other uſeful buſineſs.

Almoſt every pariſh is, in a great meaſure, ſubject to ſome particular gentleman, who has ſufficient power and influence over it, to correct the preſent grievance, and to ſet a better example. Such gentlemen ſhould conſider themſelves as guardians of the poor, and attend to their accommodation, and happineſs: it is their particular buſineſs, becauſe they, and their families, have a laſting intereſt in the proſperity of the pariſh; the farmers only a temporary one. If a gentleman's fortune be ſo large, that he cannot attend to objects of this ſort, he ſhould, at leaſt recommend the cottagers to the attention of his agent; and give him ſtrict inſtructions, to act as their friend, and protector; for unleſs ſome ſuch check be put upon great farmers, they are very apt to contribute to the demolition, inſtead of the protection of cottages; and when the neſt is deſtroyed,

ſtroyed, the bird muſt emigrate into ſome other pariſh. A cottager, in this caſe, has no other choice, unleſs it be to make application to the neighbouring juſtice of the peace, for his order to the pariſh-officers to find him ſome other place, to lay his head in. If it were not for this excellent law, which obliges pariſh-officers to find habitations for their poor, I am ſorry to remark, that in many pariſhes, they would be literally driven into the open fields.

There is another plan relative to cottages, which generally anſwers extremely well, and that is, to leaſe them off to induſtrious labourers, for the term of three lives, at their nomination; taking a very moderate fine, not exceeding ten or twelve pounds, upon a cottage worth about forty ſhillings a year; reſerving a ſmall quit-rent, not exceeding half-a-crown a year, and making it a point to renew any life which drops off, upon one year's value only. This ſcheme is beneficial for landlord

lord and tenant; for though the former does not let his cottages for ſo much as he might at rack-rent, yet what he does get, is all clear money; and by this means he preſerves the value of all other parts of his eſtate, by keeping up a proper number of inhabitants. The latter finds his account in it, becauſe he makes a ſettlement for his family; and can repair, and improve his cottage at leiſure hours with his own hands; and if he be an induſtrious man, he can generally find a friend to lend him his firſt fine, on ſuch an occaſion, if he cannot raiſe it himſelf. Sir *Charles Cocks* has lately put all his cottages upon this footing, on his eſtates, under my care, in *Glouceſterſhire*, and *Worceſterſhire*; and as he was chiefly influenced by a hnmane diſpoſition, to make the poor, in his ſeveral diſtricts, as comfortable, in their reſpective ſituations, as poſſible, the object of fines was made ſo eaſy to them, as to be exemplary.

I ſhall ſuggeſt a few hints to the builder, and conclude this ſubject with the plans, elevations, and eſtimates before alluded to.

Firſt, I recommend that the cottages ſhould be built double; becauſe it will be a conſiderable ſaving in the expence of their erection.

Where pollards are plenty, and bricks ſcarce, it will ſometimes be proper to prefer the wooden-lath and rough-caſt cottages, becauſe half the quantity of timber may be pollards; but, where they are built with brick, the following particulars ſhould be attended to.

The walls ſhould be fourteen inches thick to the bottom of the chamber-floor, except in the window-ſpaces, and the upper part of the walls nine inches. In theſe brick buildings no framed timber ſhould be uſed; but the lintel of the windows is to be laid the whole length of the building, nine inches ſcantling by two and a half; and then the ſame piece will ſerve to lay joiſts upon, which ſhould be pinned with oaken pegs, which will prove a great tie to the walls. The joiſts ſhould be cut, eight inches by two and an half, and laid edge-ways. The length of the ſpar to be ten feet, being a proper pitch for tiling; and to be cut two inches and a half thick, five at bottom, and three and a half at the top. The lower rooms to be ſeven feet high, in the clear, under the joiſts. In the largeſt-ſized brick-cottages, the roof to be hipped in at the ends, which will ſave the two peaks of brick-work, and will not require more tiling, than would be made uſe of without it. One great advantage derived from hipping, is, in the building's being better braced together, and more ſecure from the effect of tempeſts; for where the gable-ends are carried up in peaks, to any conſiderable height, without chimnies to ſtrengthen them, they are not ſo well fitted to reſiſt an end-wind.

The ceiling ſhould be between the joiſts, nailing firſt a few laths at about a foot apart, croſs-ways, and the other laths length-ways over them; otherwiſe the mortar has nothing to get hold of. This makes leſs expence than ceiling over the joiſts, and is beſides better calculated to retain the mortar, and will afford more ſpace; for the joiſts being left naked, will be very uſeful to hang many things to. The ceiling joiſts, upon the top of the chamber, need be only five inches by one and a quarter, and may be nailed to the ſpars-feet, and not pinned. The other ſcantlings are as follow. The partition ſtuds, three inches by two. The lower cills, ſix inches by five. The window-frames, three inches by three. Lower door-caſes five inches by four. Croſs mantle-pieces, for the chimnies, eight inches by eight.

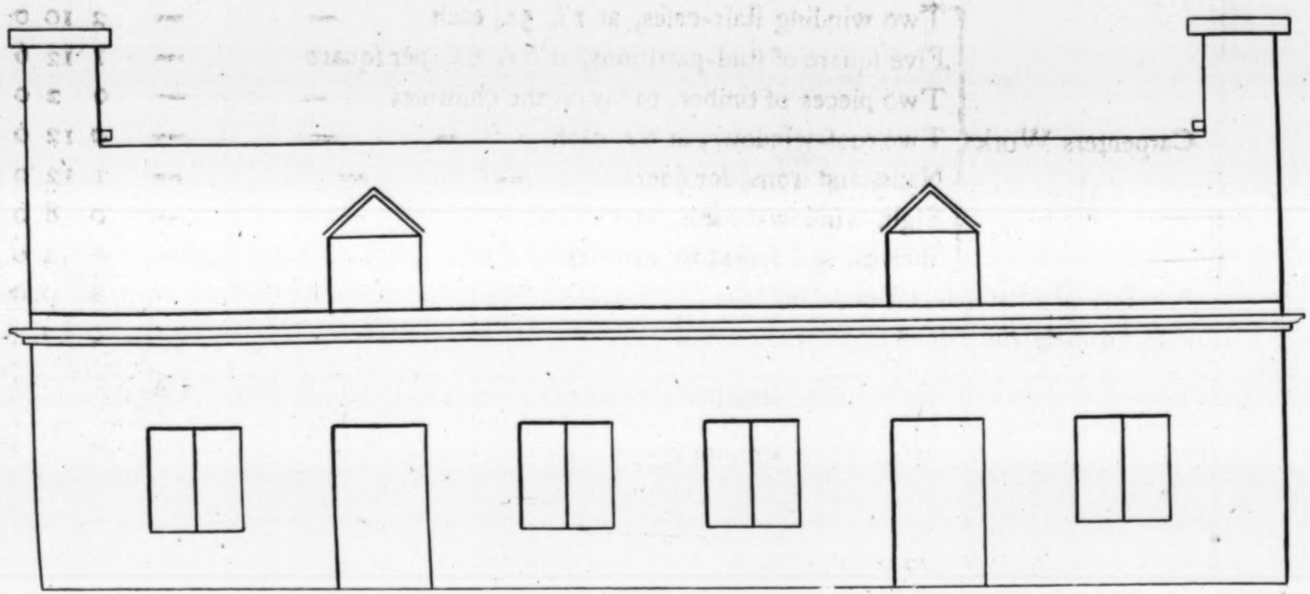
In the wooden cottages, the frame-ſtuds are to be ſix inches by five. The intermediate, or ſmaller, ſtuds five inches by three. The girt-pieces, ſix inches by five, and the upper cill, five inches ſquare.

AN ESTIMATE of the Expence of building the two Bricked Cottages, of the ſmalleſt Size.

		l.	s.	d.
Bricklayers Work	The walls 166 ſquare, at 4 *s.* 6 *d.* per ſquare — —	37	7	0
	Pan-tiling, with ſmall-ſized deal lath, and ſparkled within ſide, ten ſquare and a half at 1 *s.* 2 *d.* per ſquare — —	11	11	0
	Partitions lathed, and plaiſtered, on each ſide, with two coats of mortar, 107 yards, at 10 *d.* per yard — —	4	9	0
	Plaiſtering the walls, 144 yards, at 6 *d.* per yard —	3	12	0
	Paving with white bricks, 125 yards, at 1 *s.* 4 *d.* per yard —	8	6	8
	Ceiling, between the joiſts, 125 yards, at 6 *d.* per yard —	3	2	6
	Two ground-floor chimnies, and two fire-places in the chambers, and two ovens, and oven-lids — —	9	2	0
	Foot-lacing in the chambers — —	1	1	0
	Two flag-ſtones, for the chamber chimnies — —	0	4	0
	Carried forward	78	15	2

		l.	s.	d.
	Brought forward	78	15	2
Glaziers Work	Sixty-nine feet of glaſs, at 8 *d.* per foot	2	6	0
	Flaſhings of lead, for the roof-windows	0	10	0
Smiths Work	Two large caſements, at 6 *s.* 6 *d.* each	0	13	0
	Four ſmall ditto, at 4 *s.* each	0	16	0
	Chimney-irons, to hang pots on	0	7	6
	Two ſtoves, for chamber fire-places	0	13	0
Carpenters Work	Four tons of pollard timber, at 1 *l.* per ton	4	0	0
	Five tons of deal timber, at 2 *l.* 5 *s.* per ton	11	5	0
	Nine ſquare, and forty feet, of roofing, at 9 *s.* per ſquare	4	4	6
	Six ſquare and an half of flooring-joiſts, at 7 *s.* 6 *d.* per ſquare	2	8	0
	Six ſquare of flooring, with white-wood deal, at 18 *s.* per ſquare	5	8	0
	Twelve pair of door-caſes, at 2 *s.* a pair	1	4	0
	Twelve doors, at 4 *s.* each	2	8	0
	Eight windows, at 2 *s.* 6 *d.* each	1	0	0
	Carried forward	115	18	2

		l.	*s.*	*d.*
	Brought forward	115	18	2
Carpenters Work	Two winding ſtair-caſes, at 1 *l.* 5 *s.* each	2	10	0
	Five ſquare of ſtud-partitions, at 6 *s.* 6 *d.* per ſquare	1	12	6
	Two pieces of timber, to lay on the chimnies	0	2	0
	Two roof-windows, at 6 *s.* each	0	12	0
	Nails, and irons, for doors	1	12	0
	Eight window-boards, at 1 *s.* each	0	8	0
	Shelves, and work, to pantries	0	12	0
Carriage of materials, eſtimated at		8	0	0
Add, to make the calculation even		0	13	4
	The amount of the two cottages	132	0	0
	The amount of one	66	0	0



Elevation of two Bricked Cottages, of the smallest Size.

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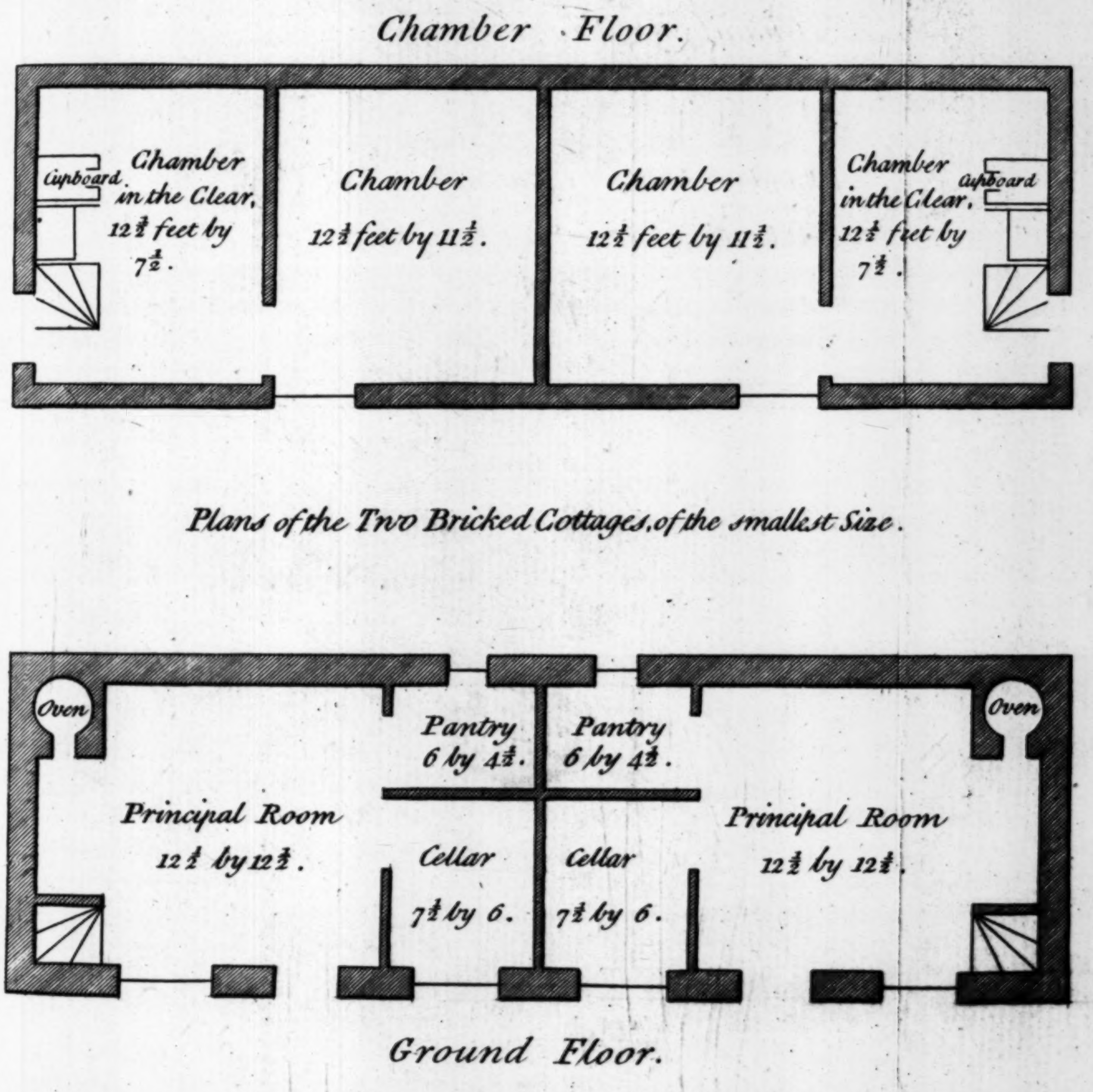
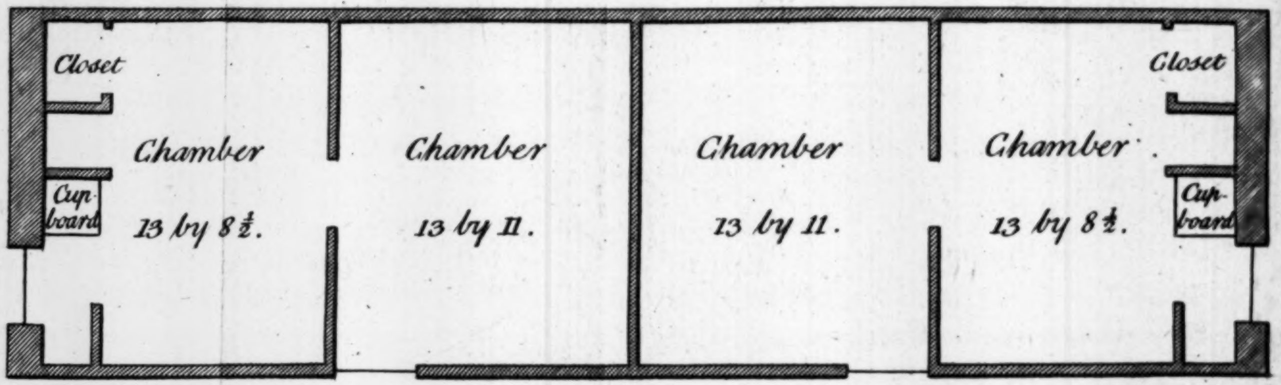

Chamber Floor.

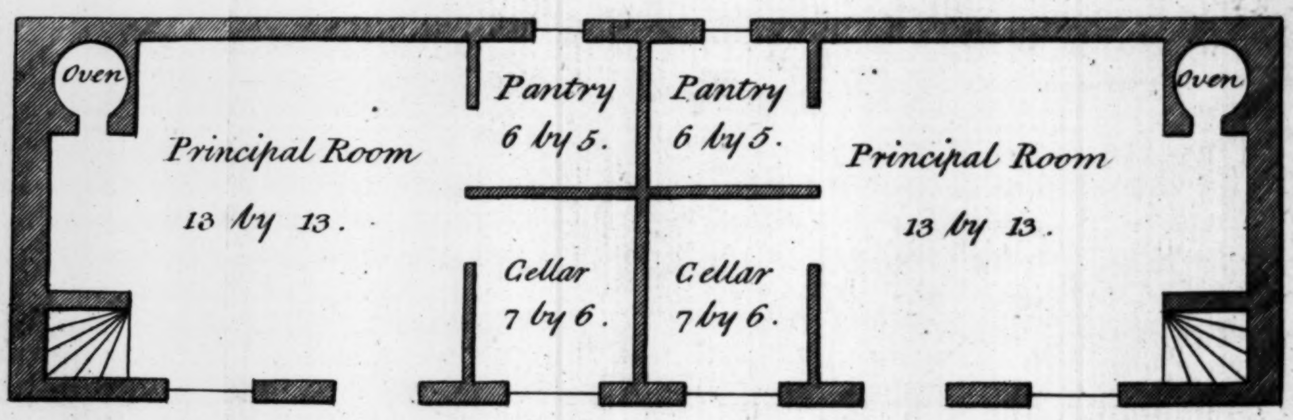
Plans of the Two Bricked Cottages, of the smallest Size.

Ground Floor.

J. Lodge sculp.

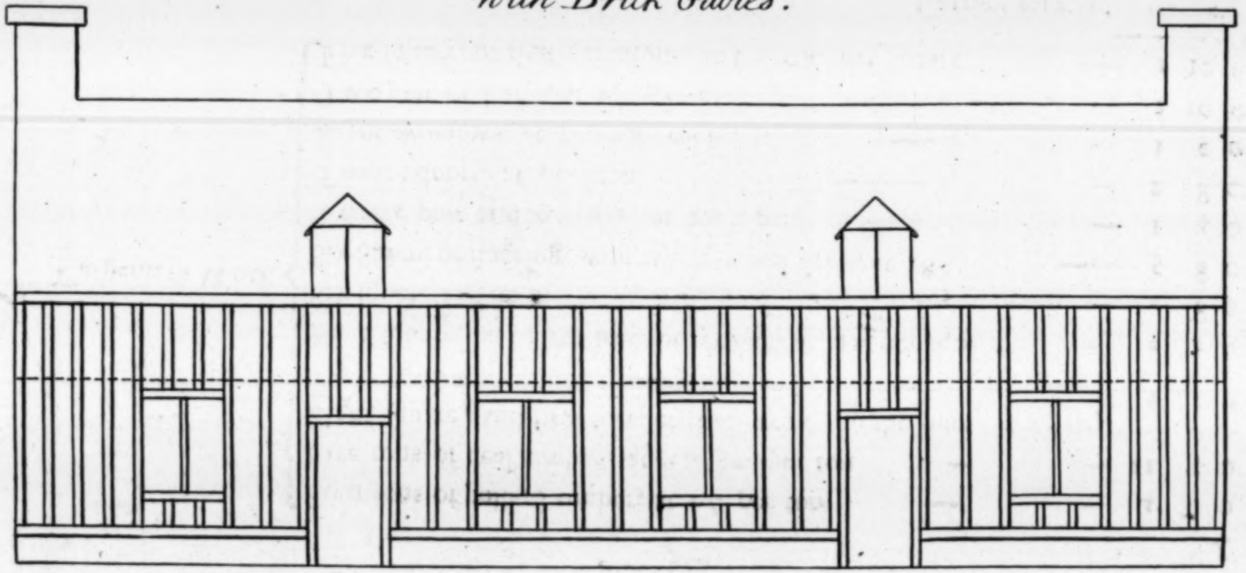


Plans of two Studd Work Cottages, of the smallest Size, with Bricked Gables.



J. Lodge sculp

Elevation of two Studd Work Cottages, of the smallest Size, with Brick Gables.



Note. As the Studds, in these Cottages, are run quite up to the Wall Plate, it is to be observed, that a Girder, sufficient to support the flooring Joists, must be laid, where the dotted Line is drawn, and the Joists, must be

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AN ESTIMATE of the Expence of building the two Stud-Work Cottages of the ſmalleſt Size, with Brick Gables.

AN ESTIMATE of the Expence of building the two Stud-Work Cottages, of the ſmalleſt Size, with Brick Gables.

		l.	s.	d.
Carpenters Work	Four tons of pollard timber, at 1 *l.* per ton	4	0	0
	Five tons of deal timber, at 2 *l.* 5 *s.* per ton	11	5	0
	Eight ſquare, and fifty feet, of ſtud-work, on the ſides, at 10 *s.* per ſquare	4	5	0
	Nine ſquare, and forty feet, of roofing, at 9 *s.* per ſquare	4	4	6
	Six ſquare and an half of flooring-joiſts, at 7 *s.* 6 *d.* per ſquare	2	8	0
	Six ſquare of flooring, with white-wood deals, at 18 *s.*	5	8	0
	Twelve pair of door-caſes, at 2 *s.* a pair	1	4	0
	Twelve doors, at 4 *s.* each	2	8	0
	Eight windows, at 2 *s.* 6 *d.* each	1	0	0
	Two pair of ſtairs, at 1 *l.* 5 *s.* each	2	10	0
	Five ſquare, of ſtud-partitions, at 6 *s.* 6 *d.* per ſquare	1	12	6
	Carried-forward	40	5	0

		l.	s.	d.
	Brought forward	40	5	0
Carpenters Work	Two pieces of timber, to lay on the chimnies	0	2	0
	Two roof-windows, at 6 *s.* each	0	12	0
	Nails, and irons, for the doors	1	12	0
	Eight window-boards, and ſhelves, and work to pantries	1	0	0
Smiths Work	Two large caſements, at 6 *s.* 6 *d.* each	0	13	0
	Four ſmall ditto, at 4 *s.* each	0	16	0
	Four chimney-irons, to hang pots on	0	7	6
	Two ſtoves, for chamber fire-places	0	13	0
Glaziers Work	Sixty-nine feet of glaſs, at 8 *d.* per foot	2	6	0
	Flaſhings of lead, for the roof-windows	0	10	0
Bricklayers Work	Forty-four yards of 14 inch wall, at 4 *s.* 6 *d.* per yard	9	18	0
	Two flag-ſtones, for the chamber-chimnies	0	4	0
	Two ground-floor chimnies, and two fire-places in the chambers, and two ovens, and oven-lids	9	2	0
	Outſide lathing, and plaiſtering, 94 yards, at 1 *s.* per yard	4	14	0
	Carried forward	72	14	6

		l.	s.	d.
	Brought forward	72	14	6
Bricklayers Work	Twenty-five yards of foundation, nine inches, at 3 *s.* —	3	15	0
	Pan-tiling, with ſmall-ſized deal lath, and ſparkled within-ſide, ten ſquare and an half, at 1 *l.* 2 *s.* per ſquare ——	11	11	0
	Partitions lathed, and plaiſtered, on each ſide, with two coats of mortar, 107 yards, at 10 *d.* per yard —— —	4	9	2
	Ceiling between the joiſts, 125 yards, at 6 *d.* per yard —	3	2	6
	Lathing, and plaiſtering the inſide of the ſtuds, 144 yards, at 6 *d.* per yard —— —— —	3	12	0
	Paving with white bricks, 125 yards, at 1 *s.* 4 *d.* per yard —	8	6	8
Carriage of materials, eſtimated at —— — —		8	0	0
Add, to make the calculation even —— — —		0	9	2
	Amount of theſe two cottages —— ——	116	0	0
	Amount of one cottage —— ——	58	0	0

AN ESTIMATE of the Expence of building the two Brick Cottages, of the largeſt Size, with hipped Ends.

		l.	s.	d.
Bricklayers Work	The walls, 181 yards, at 4*s.* 6*d.* per yard — —	40	14	6
	Pan-tiling, with ſmall-ſized deal lath, eleven ſquare, at 1 *l.* 2 *s.* per ſquare ——— ——— —	12	2	0
	Double ſtack of chimnies, and two fire-places, in the chambers, and two ovens, and oven-lids ——— —	10	2	0
	Two flag ſtones, for the chamber-chimnies —— ——	0	4	0
	Paving, with white bricks, 125 yards, at 1 *s.* 4 *d.* per yard —	8	6	8
	Partitions lathed, and plaiſtered, on each ſide, at 10 *d.* per yard	3	15	0
	Ceiling, between the joiſts, 125 yards, at 6 *d.* per yard —	3	2	6
	Falſe ceiling, in the chambers, under the joiſts, two coats, 130 yards, at 1 *s.* per yard ——— —— —	6	10	0
	Plaiſtering the walls, 169 yards, at 6 *d.* per yard — —	4	4	0
	Carried forward	89	0	8

		l.	s.	d.
	Brought forward	89	0	8
Glaziers Work.	Ninety feet of glaſs, at 8 *a.* per foot	3	0	0
Smiths Work	Four large caſements, at 6 *s.* 6 *d.* each	1	6	0
	Two ſmall ditto, at 4 *s.* each	0	8	0
	Two ſtoves, for chamber fire-places	0	13	0
	Chimney irons, to hang pots on	0	7	6
Carpenters Work	Three tons of pollard timber, at 1 *l.* per ton	3	0	0
	Three tons and an half of deal timber, at 2 *l.* 5 *s.* per ton	7	17	6
	Nine ſquare, and forty feet, of roofing, at 9 *s.* per ſquare	4	4	6
	Five ſquare of ſtudded partitions, at 6 *s.* 6 *d.*	1	12	6
	Six ſquare and an half of flooring-joiſts, at 7 *s.* 6 *d.* per ſquare	2	8	0
	Six ſquare of flooring, with white-wood deals, at 18 *s.*	5	8	0
	Twelve pair of door-caſes, at 2 *s.* a pair	1	4	0
	Two pieces of timber, to lay on the chimnies	0	2	0
	Twelve doors, at 4 *s.* each	2	8	0
	Carried forward	122	19	8

		l.	s.	d.
	Brought forward	122	19	8
Carpenters Work	Eight windows, at 2 s. 6 d. each	1	0	0
	Two pair of ſtairs, at 1 s. 5 s.	2	10	0
	Nails, and irons, for the doors	1	12	0
	Two pieces of timber, the whole length of the building, for lintels, to lay the joiſts on	0	6	0
	Six ſquare and an half of ceiling-joiſts, at 6 s. 6 d. per ſquare	2	2	3
	Eight window-boards, at 1 s. each	0	8	0
	Shelves, and work, to pantries	0	12	0
Carriage, eſtimated at		8	0	0
Add, to make the calculation even		0	10	1
	Amount of the two cottages	140	0	0
	Amount of one	70	0	0

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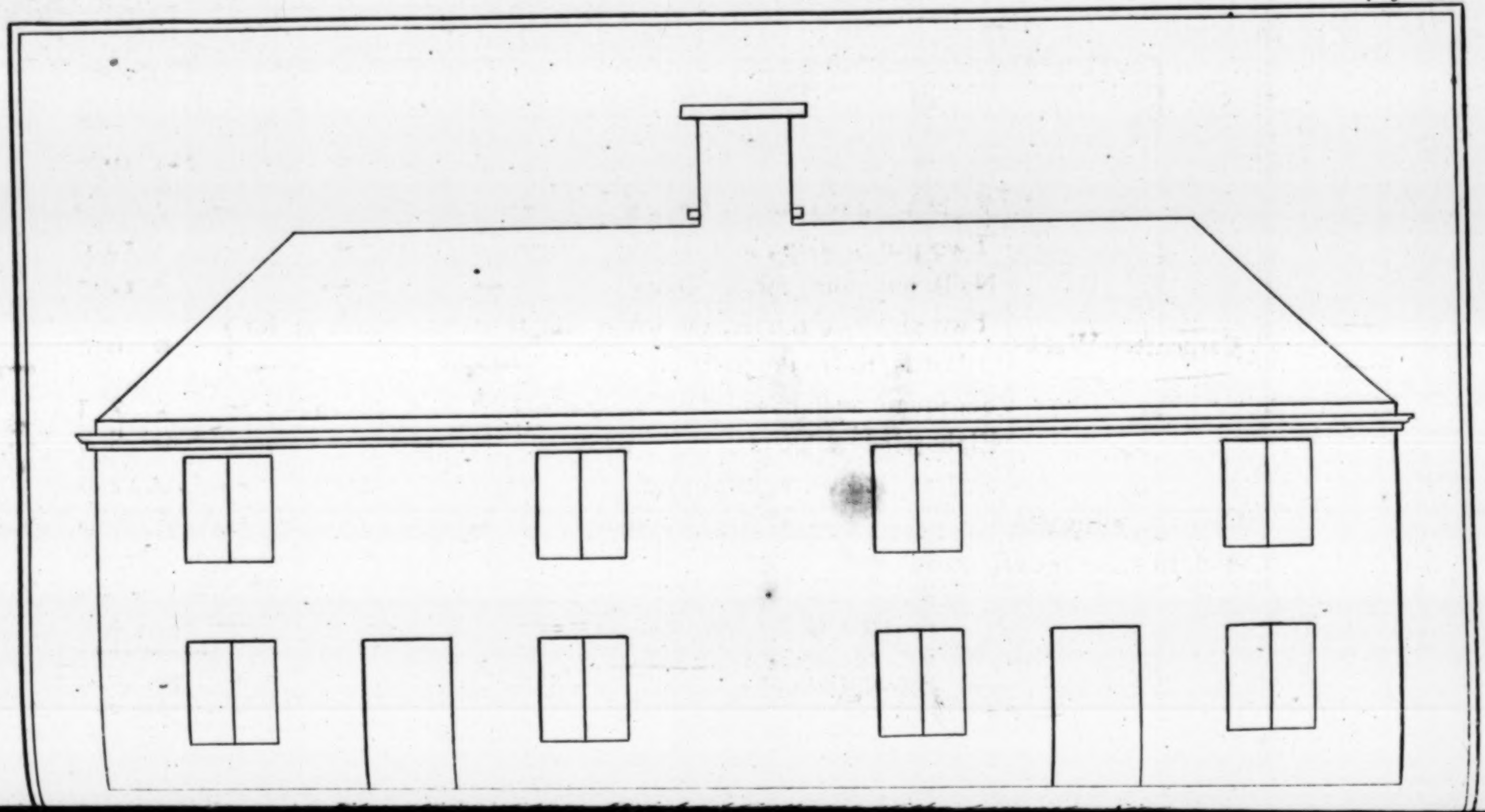
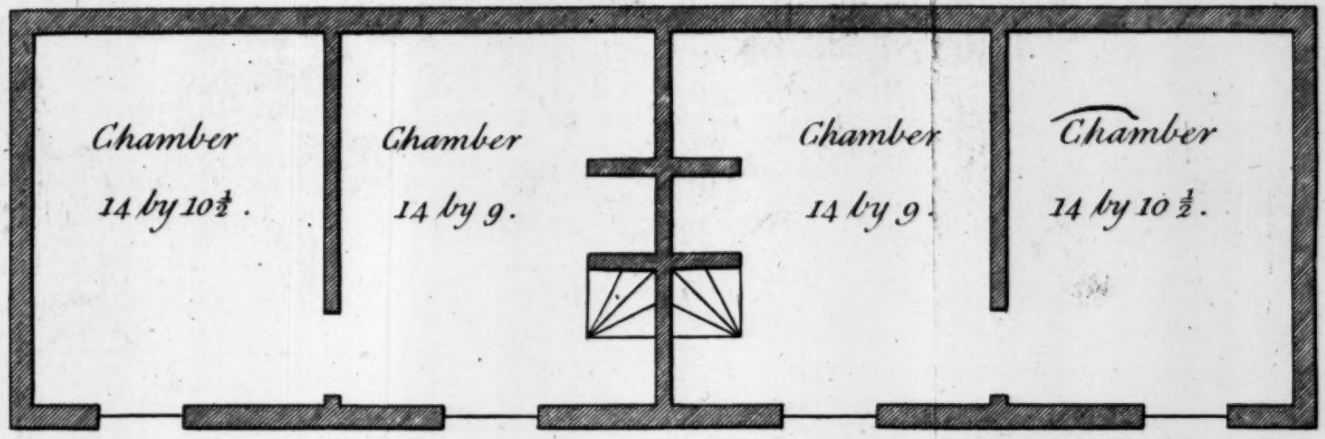
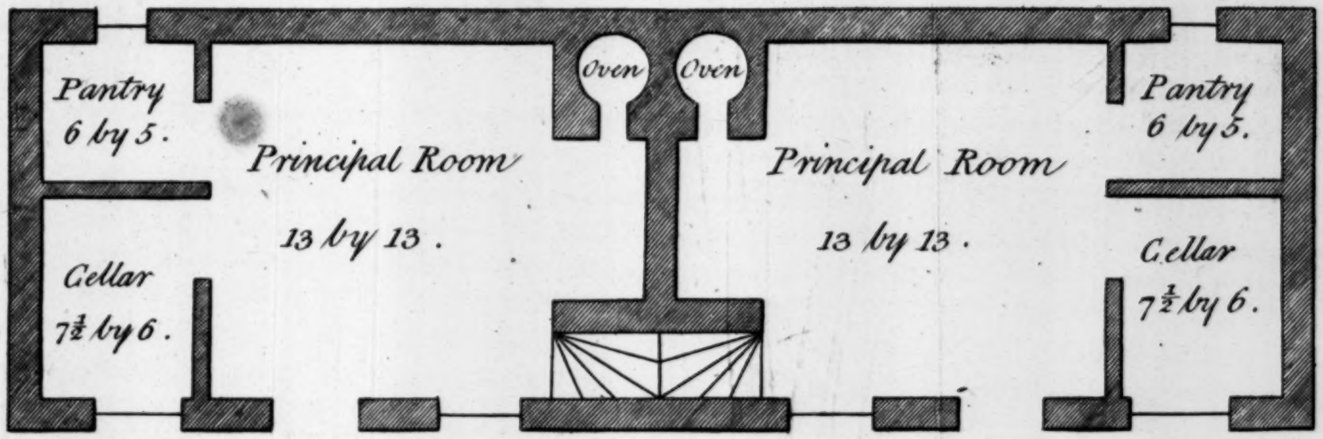


Chamber Floor.

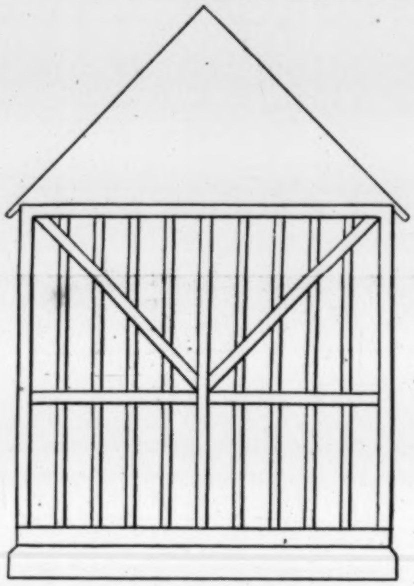


Plans of Two Bricked Cottages, of the largest Size, with Hipped-Ends.

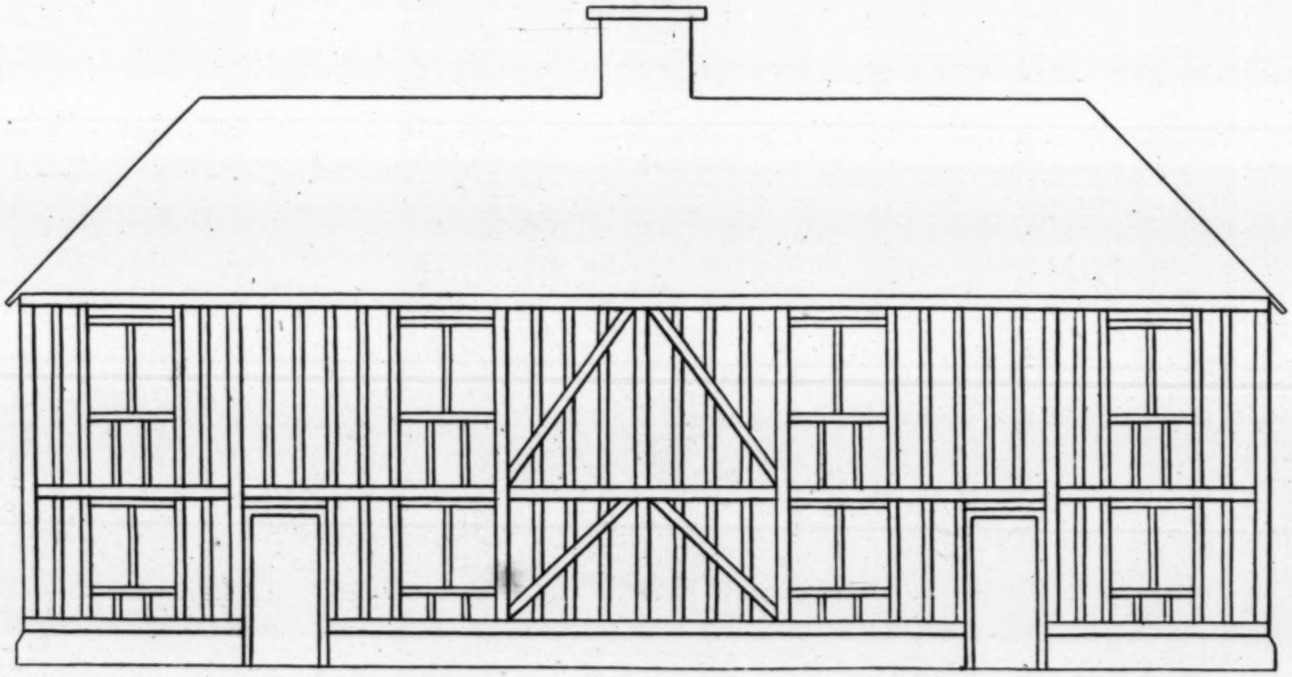


Ground Floor.

J. Lodge sculp.

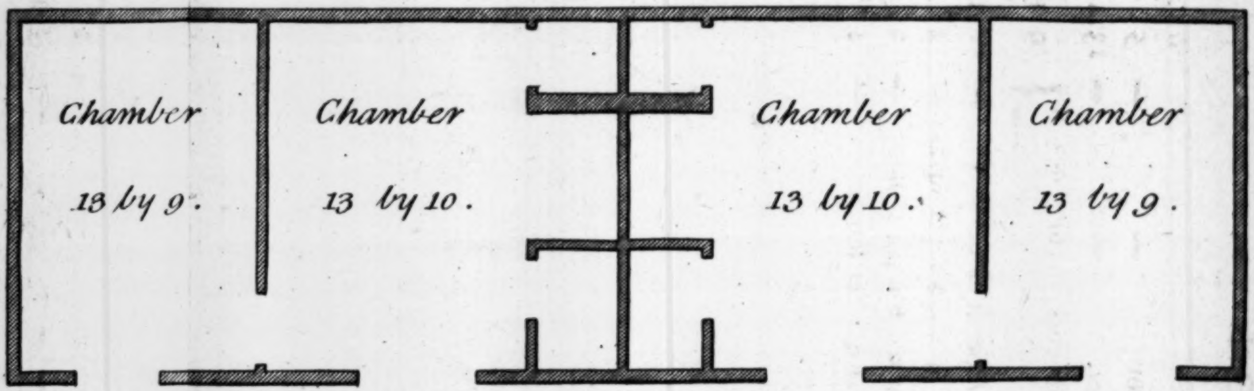


The Hipped End.

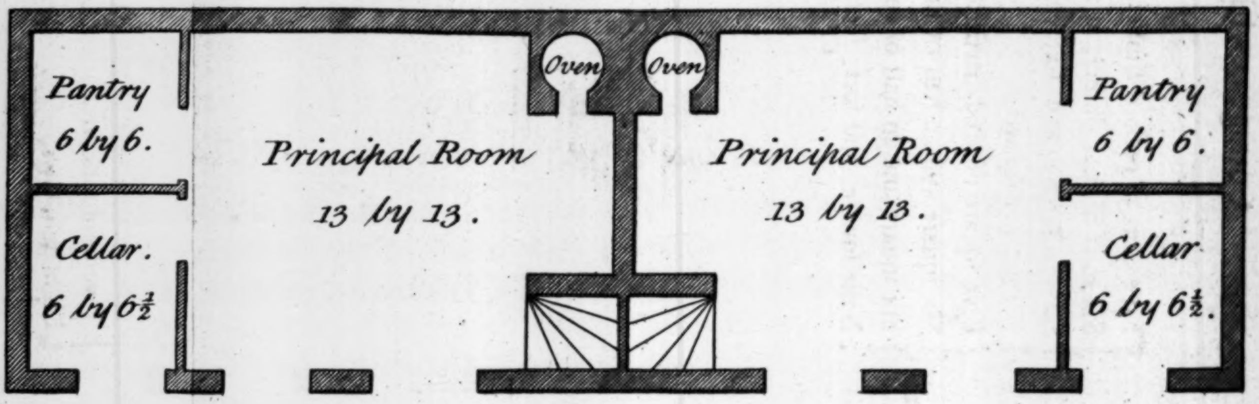


Elevation of two Studd Work Cottages, of the largest Size, with Hipped Ends.

J. Lodge sculp.



Plans of two Studd Work Cottages, of the largest Size. with Hipped Ends.



J. Lodge sculp.

An ESTIMATE of the Expence of building the two Stud-Work Cottages, with hipped Ends.

		l.	*s.*	*d.*
Carpenters Work	Five tons of pollard timber, at 1*l.* per ton	5	0	0
	Six tons of deal timber, at 2*l.* 5*s.* per ton	13	10	0
	Sixteen ſquare, and ſixteen feet, of ſtud-work, on the ſides, at 12*s.* per ſquare	9	13	6
	Five ſquare of ſtud-partitions, at 6*s.* 6*d.* per ſquare	1	12	6
	Six ſquare and an half of flooring-joiſts, at 7*s.* 6*d.* per ſquare	2	8	0
	Six ſquare and an half of ceiling-joiſts, at 6*s.* 6*d.* per ſquare	2	2	3
	Nine ſquare, and forty feet, of roofing, at 9*s.* per ſquare	4	4	6
	Six ſquare of flooring, with white-wood deals, at 18*s.*	5	8	0
	Twelve pair of door-caſes, at 2*s.* a pair	1	4	0
	Twelve doors, at 4*s.* each	2	8	0
	Eight windows, at 2*s.* each	0	16	0
	Carried forward	48	6	9

		l.	*s.*	*d.*
	Brought forward	48	6	9
Carpenters Work	Two pair of ſtairs, at 1 *l.* 5 *s.* each	2	10	0
	Shelves, and work, to pantries	0	12	0
	Two pieces of timber, to lay on the chimnies	0	2	0
	Eight window-boards	0	8	0
	Nails, and irons, for the doors	2	0	0
Smiths Work	Four large caſements, at 6 *s.* 6 *d.* each	1	6	0
	Two ſmall ditto, at 4 *s.* each	0	8	0
	Two ſtoves, for chamber fire-places	0	13	0
	Four chimney-irons, to hang pots on	0	7	6
Glaziers Work.	Ninety feet of glaſs, at 8 *d.* per foot	3	0	0
Bricklayers Work	Falſe ceiling, in the chambers, under the joiſts, 130 yards, at 1 *s.*	6	10	0
	Ceiling, between the joiſts, 125 yards, at 6 *d.*	3	2	6
	Forty-four yards of foundation-walls, at 3 *s.* per yard	6	12	0
	Outſide lathing, and plaiſtering, 122 yards, at 1 *s.* per yard	6	2	0
	Carried forward	81	19	9

		l.	s.	d.
	Brought forward	81	19	9
Bricklayers Work	Ten ſquare and an half of tiling, at 1 *l.* 2 *s.* per ſquare —	11	11	0
	Inſide partitions lathed, and plaiſtered, on both ſides —	3	15	0
	Two ground-floor chimnies, and two fire-places, and two ovens, and oven-lids — — —	10	2	0
	Paving, with white bricks, 125 yards, at 1 *s.* 4 *d.* —	8	6	8
	Lathing, and plaiſtering, the inſide-ſtuds, two coats of mortar, 169 yards, at 1 *s.* per yard — — —	8	9	0
	Two flag-ſtones, for chamber fire-places — —	0	4	0
Carriage of materials, eſtimated at — — —		8	0	0
Add, to make the calculation even — — —		0	12	7
Amount of theſe two Cottages — — —		133	0	0
Amount of one — — —		66	10	0

REFLEC-

REFLECTIONS ON THE DISTRESS OF THE POOR, AND THE INCREASE OF THE RATES FOR THEIR ASSISTANCE.

"*THOU ſhalt not muzzle the ox when he treadeth out the corn,*" is a divine law, figuratively ſignifying, that the poorer race of people, who are the inſtruments, by which the earth is cultivated, ought to enjoy a reaſonable portion of its produce.

The landlord, tenant, and labourer are intimately connected together, and have their reciprocal intereſt, though in different proportions; and when the juſt equilibrium between them is interrupted, the one or the other muſt receive injury. At preſent the balance is conſiderably againſt the labourer; and yet, though it ſeems a paradox, the other parties ultimately derive no advantage from it.

The great increaſe in the Poor-rates may be accounted for in a few words. The riſe upon land and its produce together is at leaſt ſixty per cent. the riſe upon labour not above twenty. The difference is, of courſe, againſt the working hands; and when their earnings are inſufficient for the abſolute neceſſaries of life, they muſt inevitably fall upon the pariſh; which is bound, in that caſe, to make up the deficiency. So that if we conſider this matter properly, we muſt diſcover a great want of policy in beating down the value of labour, not to mention the inhumanity of ſuch an action. For it is much better, for a farmer to give an induſtrious man, who has a large family, half-a-crown a week more than is generally given, being only 6*l.* 10*s.* a year, than to load a farm with that additional incumbrance in the rates; becauſe when once a poor man is obliged to have recourſe to the pariſh, he thinks it no greater diſgrace, to be beholden to it for a crown, than a ſhilling; and therefore, when he cannot wholly ſupport his family by labour, he will not care how little he contributes towards it.

If owners, and occupiers, of land would conſent, to raiſe the price of labour, in proportion to the increaſe of their profits, a great part of the diſtreſs among the poor would be removed. At preſent they cannot live by their labour;—let us examine their condition. We will firſt ſuppoſe that the rent of the cottage is paid, by the extra-earnings of the family, in time of harveſt; and then we may allow fourteen pence a day, as a medium of wages for the man, which is nearly the preſent rate of wages, taking one place with another. The wife we will ſuppoſe to earn three pence a day, beſides attending upon her children. This will be eight ſhillings and ſix pence a week between them. If they happen to have five ſmall children, which is no uncommon number, how are they to ſupport themſelves? If we allow the man a pound and an half of bread every day, and the wife and children three quarters of a pound, one with another, which is about the quantity they will require, this will be forty-two pounds a week; and the price of it cannot be eſtimated, at leſs than three halfpence a pound. This brings the article of bread alone to five ſhillings and three pence a week; and there remains only three ſhillings and three pence, for all the other neceſſaries of life, which muſt be greatly inſufficient. While the preſent high price of proviſions continues, it is impoſſible that ſuch a family can eat any thing except bread, which is a very cruel caſe upon a poor man, whoſe whole life is devoted to hard labour. On the contrary, were he allowed eighteen pence a day, which would be nearly the ſame proportion as the increaſe in the value of land, and price of proviſions, their income would be together ten ſhillings and ſix pence a week; which, under proper management, would enable them to cloath themſelves decently, and add about eight or ten pounds of coarſe meat to their bread, which they are ſurely entitled to by the laws of nature, and the ties of humanity.

There is ſtill another cauſe, which greatly heightens this diſtreſs, and that is the diſadvantage theſe poor objects labour under, in carrying their dear-earned penny to market. Formerly they could buy milk, butter, and many other ſmall articles in every pariſh, in whatever quantity they are wanted. But ſince ſmall farms have decreaſed in number, no ſuch articles are to be had; for the great farmers have no idea of retailing ſuch ſmall commodities, and thoſe who do retail them, carry them all to towns. A farmer is even unwilling to ſell the labourer who works for him a buſhel of wheat, which he might get ground for three or four pence a buſhel. For want of this advantage he is driven to the meal-man, or baker, who in the ordinary courſe of their profit, get at leaſt ten per cent. of them, upon this principal article of their conſumption; which they might ſave, if their employers would ſupply them with corn, at the common market-price. In ſhort they labour under every diſcouragement. For the very perſons who have the advantage of their labour, and whoſe duty it is to make their ſituation comfortable, are often their greateſt oppreſſors; and as the principal farmers of every pariſh are generally the overſeers of the poor, their complaints are frequently made to a deaf ear.

It will doubtleſs be aſked, how ſhall we obviate all theſe evils, and where is the remedy for them? To theſe queſtions every one has a different anſwer, according to the difference of his ideas. My anſwer is, Let gentlemen of fortune take upon them the ſuperintendance, and regulation, of country-buſineſs more than they do. Let them act as guardians to the poor, by conſidering their eſtates as in good, or bad condition, only in proportion to the comfortable, or miſerable condition of the labourers who cultivate them. Let them reduce the ſize of their farms, in order to increaſe the ſmaller articles of proviſions, and to throw them into more channels. Let them increaſe the price of labour, in proportion to the riſe upon land, and the price of proviſions. By ſuch encouragement, the induſtrious poor will find a comfortable ſupport. I ſay the induſtrious; becauſe I do not know any ſcheme, or any law that can alter the diſpoſition, and force people to be induſtrious, whether they will or no. And from hence, I conceive, it has, in part, happened, that much wiſer heads than mine have been puzzled, how to make any effectual amendment to our Poor-Laws. The late Earl of *Hardwicke*, and Sir *Richard Lloyd*, it is well known, had this point long under conſideration; and the reſult was, that with all their large experience, and confeſſed abilities, they were obliged to leave the matter juſt as they found it. The loud cries of the poor have now afreſh excited the attention of the legiſlature. Houſes of induſtry, as they are called, ſeem now to be the favourite object; and they have lately been recommended with a ſpirit of ingenuity, and humanity, that will ever do honour to the able author of "Obſervations on the "Poor-Laws, &c." *. I wiſh ſucceſs to every ſcheme that tends to ſpread general happineſs; and if houſes of induſtry ſhould be adopted by Parliament, may no untoward accident prevent the good deſign of the projectors! May the diligence and zeal of future overſeers ever keep an even pace; and a good intention not fail, as it has ſometimes done, with the novelty of it! In the mean while, as ſuch a capital change muſt be the work of time, let it be endeavoured, to make the poor, as comfortable as may be, in their own pariſhes. From the general demolition that has happened, other houſes will be wanting for

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* Written by the Reverend R. POTTER.

their accommodation, beſides houſes of induſtry; and the poor are not leſs attached to domeſtic endearments than the rich. Let mine, or any other plan be adopted for this purpoſe. It matters not who is the projector, provided the induſtrious man receive due encouragement, to continue his labour. But I am perſuaded that every gentleman will find his account, in purſuing the humane, and juſt, meaſures, I have ventured to recommend. His eſtate, by being ſo materially eaſed in the article of the poor's tax, will not pay him a farthing leſs than it does at preſent; and he will be honoured, and diſtinguiſhed in his neighbourhood, by the nobleſt appellation, ſuperior to all titles, that of being the POOR MAN'S FRIEND.

SUPPLEMENTARY

HINTS.

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DECLARATION.

THE handſome manner, in which the two editions of my former publication have been received by the Public, and the benefits which I truſt have in many inſtances been derived from my ſuggeſtions, have been felt by me, with the higheſt ſatisfaction and gratitude. And having had ſeventeen years ſubſequent experience, in the moſt extenſive management and improvement of eſtates, I am, from theſe conſiderations, induced to offer a few additional obſervations, which have ſtruck me ſince my firſt publication.

Though I will frankly allow, that like other profeſſional men, I have had my pecuniary reward, for the ſervices I have rendered my reſpective friends; yet I can aſſert, with the utmoſt regard to truth, that in eſtimating the value of eſtates, between landlord and tenant, I have always conſidered myſelf as the common friend of both; and endeavoured to act the part of an honeſt evidence between them: and where I have entertained doubt, I have never failed to let the ſcale preponderate in favour of the latter. In addition to this, it has been my great aim, to qualify gentlemen of landed property, to be judges of the value of their own eſtates; and by exciting in them an attention to rural concerns, to learn them to diſtinguiſh the real wants of the oppreſſed, from the unreaſonable demands of the idle and profligate; and to act as guardians to the lower claſſes of mankind, whoſe comfort it is greatly in their power to augment, without any injury to themſelves. I ſhall perſevere in my former plan; and where I ſee prejudices, which operate againſt the good of ſociety, ſhall endeavour to remove them.

AGRICULTURE,

WHICH I formerly remarked, had been very little attended to as a ſcience; has however of late years been much more the object of men of fortune than formerly; and has received great encouragement from different ſocieties, as well as individuals, who have given the moſt liberal aſſiſtance to it, by premiums and honorary commendation, to thoſe who have rendered themſelves uſeful in its promotion; and theſe proceedings have been followed with the moſt beneficial conſequences, to trade and commerce, the great branches of national proſperity. The Society of Arts, Manufactures, and Commerce, of which I have now the honour to be a member, has ſhewn the moſt laudable zeal for its proſperity; and I am perſuaded, the public will derive great advantage, from their taking it up on a more extenſive field, than any other ſimilar ſociety has been able to do; the account of every rational experiment, that is communicated to them, being conſpicuouſly regiſtered, and urgently recommended, as an example of imitation.

A ſenſible appropriation of ſoil to its right uſe, and of the moſt profitable ſtock of cattle to the ſoil moſt ſuitable to it, has been lately thought worth the attention of thouſands, who were before ſupine and indifferent as to the vaſt importance of this conſideration.—But there is yet much to do, and nothing ſhould be neglected, which promotes general good; for agriculture, though improved, is very far from having reached its zenith in England.

Moſt other improvements carry only local advantages, but improvements in agriculture are diffuſive of univerſal good; and therefore every individual, or ſociety of men, who promotes their extenſion, deſerves the approbation and thanks of mankind.

COMMONS.

IN addition to the various remarks, I have before made upon theſe large neglected tracts of land *, I truſt I ſhall not be thought prolix, if I ſay a word or two more.

Mr. King, in his calculations of the quantity of waſte land in England and Wales, reckons three millions of acres. Since his time the quantity is conſiderably diminiſhed; but there can be no doubt, but there are at this time, full two millions, excluſive of roads and mountains; at leaſt two thirds of which, will anſwer cultivation.

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* See chapter on Waſte Lands, page 90.

From obſervation and enquiry, I find, that in the moſt fertile parts of England, the people employed in agriculture, and the rural trades connected with it, are in about the proportion of one to ſix acres; and if a proportionate number be added for the towns, and people employed in other trades not connected with huſbandry, the number will be perhaps, as one to four acres of land. But, as the more ordinary parts will not carry ſo high a population, the ſafer average may be to ſet the ſcale generally, as one perſon to five acres; and as theſe lands do not ſupport a third of the number of people which they would do, if they were well cultivated, here is a viſible loſs of an hundred thouſand inhabitants, which this country might ſupport more than it does: and the advantages which might be derived from ſuch an increaſe of population, in a trading country, I ſhall leave to the pen of the financier to eſtimate.

And why ſhould not the greater part of theſe rude tracts of land, be cultivated? Why ſhould this rough jewel ſtill remain unpoliſhed?

The arguments for their continuance in their preſent ſtate, as I have before obſerved, are in general grounded on miſtaken principles of humanity; and though often ſpecious, cannot be ſupported by ſound reaſoning.

There are however ſome Commons, which from complicated intereſts cannot be incloſed; in which caſe I recommend my readers, to adopt a particular mode for improving them, which was publiſhed by me in the Annual Regiſter, for the year 1780; by which means, they may be made at leaſt, pleaſant to the eye, and comfortable to the foot, and conſiderably more productive than they now are.

COMMON FIELDS.

IT has long been a ſubject of infinite conjecture, how the land of different eſtates, became originally, ſo ſcattered and divided in Common Fields. Many reaſons are aſſigned for it: but, waving all uſeleſs inveſtigation of this ſort, I ſhall briefly conſider the diſadvantages, that land of this deſcription is at preſent ſubject to; and endeavour to ſhew the advantages that reſult from laying it more together, and incloſing it.

Land, when very much divided, is the occaſion of great loſs of time to the occupier, in going over a great deal of uſeleſs ſpace, in keeping up a communication with the different pieces. As it lies generally in long narrow ſlips, it is but ſeldom it can receive any benefit from croſs ploughing and harrowing, therefore it cannot be kept ſo clean; but what is ſtill worſe, there can be but little variety obſerved in the ſyſtem of cropping; becauſe the right which every pariſhioner has of commonage over the field, a great part of the year, prevents the ſowing of turnips, clover, or other graſs ſeeds, and conſequently cramps a farmer in the ſtock which he would otherwiſe keep.

On the contrary, when land is incloſed, ſo as to admit of ſowing turnips and ſeeds, which have an improving and meliorating tendency; the ſame ſoil will, in the courſe of a few years, make nearly double the return it did before, to ſay nothing of the wonderful improvements, which ſometimes reſult from a loam or clay, which when well laid down, will ſometimes become of twice the permanent value in paſture, that it ever would as ploughed ground. Moſt ſtriking effects of this ſort, are to be ſeen in Leiceſterſhire and Northamptonſhire, and other of the midland counties. This indeed has been urged by ſome as an argument againſt incloſing, as they would infer, that it leſſens the quantity of arable land too much, and tends to make corn dear. But the exceſſes of grazing and ploughing, will correct themſelves. If arable land be laid down, there is a great deal of coarſe old paſture land, which may be broken up; the turf of which wants renewing, and this old graſs land, which could not ſo well have been ſpared before, is of all land that which is beſt adapted to the growth of potatoes, hops, hemp, and flax. The markets will ever regulate the due proportion of arable and graſs land, better than any fixed plan that can be ſuggeſted.

If we properly conſider the benefits

reſulting to population, from incloſing (though that as well as the benefits which might be derived from commons, has been ſuperficially queſtioned) it will ſtrike us with aſtoniſhment. Let the population of England be compared with what it was fifty years ſince, and I preſume it will be found increaſed nearly a third: if I were aſked the cauſe, I ſhould ſay, that I believe it is chiefly from incloſing; and my reaſons for it are, that in all places where my obſervation has come, it carries full proof. I have ſeen the effects in many parts of England, but I ſhall ſubjoin one ſtriking inſtance. The pariſh of Felbrigg in Norfolk, conſiſting of 1,300 acres of land, which, till the year 1771, remained time out of mind in the following ſtate: 400 acres incloſed, 100 wood land, 400 acres common field, and 400 in common or heath. By authentic regiſters at different periods, it appeared that the number of ſouls had never been known to exceed 124, which was the number in 1745; in 1777, they were only 121: and at this time, they amount to 174. This rapid increaſe, I attribute to the recent improvements made in the pariſh, by incloſing the common field land, and by converting moſt of the common into arable land and plantations. The pariſh has no particular connection with any other, and therefore its own increaſe of labour, and produce, muſt be the cauſe of this ſtriking alteration.

If then incloſing be found ſo beneficial, every obſtruction to it ought to be removed. In the firſt place, there ought to be one general act of parliament formed, under which any pariſh that could agree in itſelf, ſhould be able to take ſhelter; or even any two or more perſons agreeing upon any exchange of land, or the ſeparation of a mixed intereſt, whereby the incloſing of ſuch land was the reſult, ſhould, upon payment of ſome ſmall conſideration, receive the ſanction of a ſhort ſummary law to bind their agreement; this would, inſenſibly lead to a vaſt field of improvement.

Something of this ſort was attempted ſome time ſince; but the gentleman who brought it forward, was not ſufficiently popular to carry the buſineſs through, and perhaps there might have been ſomething exceptionable in his plan: it is however to be wiſhed, that ſome reſpectable and well informed perſon in the Houſe of Commons, would conſider the magnitude and importance of the object, and bring it forward again. If ſuch an attempt be made, upon ſound and rational principles, I flatter myſelf the preſent adminiſtration would not be againſt its introduction; nor, I truſt, at a loſs, to find the means of removing, one of the principal obſtructions to the preſent mode of incloſing, namely, the very high fees that are at preſent taken when a Bill is ſolicited, which always operates as a powerful diſcouragement to undertakings of this kind, and ſometimes ſets it wholly aſide, eſpecially as they are double, if another pariſh has the ſmalleſt ſhare in the emolument, though the trouble to thoſe who paſs the act, is not perhaps the leaſt increaſed by it. But this is not all the diſcouragement, for in the courſe of obtaining a bill, the evidence muſt all go up to town; firſt, to be ſworn at the bar of the Houſe of Lords; afterwards to attend the Judges, who are often ſo much engaged in other buſineſs of great national conſequence, that they are perhaps unable to take the examination for ſome time. The expence is therefore conſiderably increaſed by their continuance in town; after this, a Committee of the Lords and Commons muſt be attended; and as theſe attendances are often at intervals conſiderably diſtant from each other, the evidence muſt all this time either be ſupported in town at a great expence, or make three or four journies. And as this ſort of evidence is generally given by profeſſional men, whoſe time is valuable; theſe delays are very inconvenient, and frequently operate ſo powerfully upon the minds of people, that many an incloſure is paſſed over, which would otherwiſe have been effected. And this, in a great meaſure, will account for ſo many of our commons and common fields having ſo long remained in their preſent ſtate.

In making theſe remarks, my meaning is not to caſt any reflection upon any quarter, but to awaken the attention of the Legiſlature to the importance of the ſubject, that all poſſible encouragement may be given to the enterpize of the individual, for all improvements in agriculture, which carry grand weight, and in the end become national objects, muſt be effected by the individual; becauſe it muſt be the multitude that cultivate the hidden corners of the earth, and out of a little make a mickle. Any thing which government could do in a pecuniary way, by encouraging a few perſons in a local ſituation, will never operate ſo extenſively as the natural exertions of the public; but it is incumbent on government, to give the individual all the aſſiſtance it can, to remove all vexatious obſtructions, and ſmooth the road to all honeſt undertakings which individuals may wiſh to bring forward. It is likewiſe preſumed, that it would be ſound policy in government, as it will ever derive a proportionate advantage, from the induſtry of the people. I truſt therefore, that the legiſlature will ſee the neceſſity of contriving a more ſummary mode of ſanctioning incloſures in general, for the good of mankind, as well as its own emolument.

REMARKS ON THE PROPORTIONATE VALUE OF REAL AND PERSONAL PROPERTY.

REAL and perſonal property, have ever been purchaſed and ſold at different rates of intereſt, but have always preſerved a ſort of proportionate ſcale.

The difference in point of ſecurity will of courſe bias their value ſomething; but there are other cauſes to be conſidered, which affect them more.

The general value of property in a commercial country, is principally governed by the great ſpring of human induſtry. Its particular value by the difference of tenures, cuſtoms, and various other local conſiderations.

The permanency of landed property, and the command it gives, are ſtrong inducements to prefer it to every other kind of ſecurity; on which account, we no ſooner ſee a fortune acquired, than we perceive the poſſeſſor of it anxious to ſecure it on this baſis.

On the other hand, there are ſo many charges, incumbrances, and drawbacks, incident to landed eſtates, that women in general, and many other perſons, will often prefer government, or even private ſecurity to it, eſpecially as they get a higher intereſt.

From theſe conſiderations, and the changes which death is continually making in property, there muſt be always a great fluctuation of it in this opulent country: "So much the better," ſays the ſpirit of law; which is ſaid to abhor long poſſeſſion.

But to come more to the point I have in view: It would undoubtedly be a moſt beneficial thing to the public, if the tranſfer of eſtates could be made with the ſame eaſe as a transfer of perſonal property is made in the funds; that is, that a clear, neat, unequivocal return from a landed eſtate, ſhould find a purchaſer with leſs difficulty than it does now. This however can never be the caſe in a general way; as particular ſituations, and various other conſiderations, will always affect the landed intereſt. But there are certain points to be cleared up, and obſtructions that may be removed, which would give a great ſpring to its ſale and circulation.

It is a nice point to diſtinguiſh properly, the proportionate value which one tenure bears to another.

But, this is not all that is required, for the ſeparating of combined intereſts. The aſcertaining the value of reverſions after lives in poſſeſſion, or terms of years, and the proper allowance to be made for neceſſary buildings, are all connected together, and attended with difficulty; in ſomuch, that when theſe calculations come before perſons who are not expert at them, they are very puzzling, and frequently done upon looſe, vague principles, and conſequently with inaccuracy.

Nineteen times out of twenty, eſtates are bought and ſold upon round numbers.

If there is a mixture of inferior tenure, perhaps too much or too little may be allowed for it. The want of a true criterion creates doubt; and doubt impedes the transfer: any thing therefore that can aid the purpoſe of paſſing eſtates from one perſon to another, with the greater facility, may be properly introduced here.

Suppoſe then that the gradual ſcale, by way of an outline, be taken up thus. When the funds ſtand pretty ſteady at four per cent. the ſtandard of mortgages may be conſidered at four and an half. The fee ſimple on the neat return of land, ought then to be current at three; copyholds of inheritance upon a fine certain, at three and an half; copyholds with a fine at the will of the lord, at four. This general rule is ſhort, and may be regiſtered in the mind of every man of buſineſs, who is concerned in buying and ſelling eſtates; and on many occaſions, it is preſumed, may be of uſe to him. But where circumſtances are particularly complicated, it is ſometimes neceſſary to go into a deeper calculation: in ſuch caſes, there are many perſons in London to whom recourſe may be had. And I truſt it will not be thought improper to obſerve in this place, for the information of my friends, and any other perſons wanting aſſiſtance of this ſort, that

I have eſtabliſhed an Office for Landed Property in Craig's Court; where Eſtates for purchaſe and ſale are eſtimated, and calculations of every denomination that can affect them, are made upon terms of moderation; and thoſe terms always ſtated before the buſineſs is undertaken.

THE IMPORTANT QUESTION OF LEASES CONSIDERED.

THE ancient feudal tenures had, undoubtedly, a ſtrong tendency to enſlave mankind, by ſubjecting them to the controul and power of an arbitrary lord; but, like moſt other things, there were ſome advantages to be found in the ſyſtem. Every man who held land, had a certainty in it, as the tenant generally held his poſſeſſion for life. When theſe tenures were diſcountenanced by the more liberal ſpirit of modern law, ſome new compact became neceſſary, and terms of years were ſubſtituted in lieu of the former; for as land properly managed requires great expence, and ſeldom anſwers that expence in one year, it was but reaſonable,

ſonable, that the man, who applied his judgment, devoted his labour, and ventured his capital, ſhould have ſome reaſonable time allowed him to reimburſe himſelf, and derive ſome proportionate reward for what he had done.

In the courſe of time, this term began to be reduced into a certain number of years; and as moſt of the land was formerly under the regulation of two crops and a fallow, the time allowed was from three to twenty-one years. And the latter in the end became the moſt general limitation, and is the moſt prevalent term for leaſes at this time.

That leaſes are the firſt, the greateſt, and moſt rational encouragement that can be given to agriculture, admits not in my opinion of a doubt; but of late years, there are very ſtrong prejudices entertained againſt them.

Let any impartial man take a view of two diſtricts, where it is the cuſtom to grant leaſes, and where it is not: in the former, he will generally find a reſpectable yeomanry, and a well cultivated country; in the other, an indigent ſpiritleſs race, following a contracted ſyſtem of huſbandry, calculated to anſwer no permanent purpoſe of advantage to themſelves or landlords. Yet, there are many gentlemen, who to have ſuch people at immediate command, prefer the continuance of a ſlovenly, unproductive ſtile of huſbandry, to neatneſs and fertility.

In ſome parts of England, the prejudice againſt leaſes is ſo ſtrong, that ſome landlords will be tempted almoſt as ſoon to alienate the fee ſimple of their eſtates, as to grant a tenant a reaſonable term in them. It is very unfortunate for a country where this abhorrence of leaſes prevails, as it keeps back an immenſe ſcene of improvement,

provement, which otherwiſe would take place, and robs the induſtrious occupier of a deal of comfort which might be beſtowed upon him; and this can produce no other conſolation to the owner, than that of his having the country more at command, and forcing a certain degree of reſpect from it; which is abſurd to the laſt degree; for a landlord may enſure as much real reſpect from a tenant on leaſe, as from a tenant at his immediate will and pleaſure, and at the ſame time, ſecure his property better, and ſtipulate for improvements to the extent of his inclination.

In the eaſtern counties, where it is more the cuſtom to grant leaſes, than in the midland part of England, agriculture is upon the moſt reſpectable footing; and within half a century, there are many eſtates more than doubled in their value; which, without leaſes, where the means of improvement was heavy, could not have carried a third of the advance that has been put upon them. In ſhort, it ſeems unreaſonable to expect a man to employ the whole of his capital, and to devote the beſt part of his life, upon an eſtate, which, upon the death or mere caprice of his landlord, he is liable to be turned out of, at ſix months notice.

I do not, however, mean to imply, that leaſes ought not in any caſe to be withheld; there are certainly ſome exceptions againſt the practice, I would wiſh to ſee eſtabliſhed: For inſtance, if lands are ſituated very near a gentleman's houſe, part of which it may perhaps be an object, on ſome future occaſion, to take into hand, or where a minor is very near coming of age, or where there is any immediate view of ſale; in ſuch caſes, it would be imprudent to grant leaſes. But where none of theſe contingencies ſtand in the way; and where eſtates are under an entail, or in a family, that has no idea of parting with them; leaſing is unqueſtionably the moſt effectual means of raiſing the value of an eſtate; as it enables the owner to ſtipulate for improvements in what way and proportion he pleaſes, which he cannot do ſo well by any other means.

THE DUTY OF A COUNTRY GENTLEMAN.

THE duty of a country gentleman may be divided into two parts; public, and private.

His public duty conſiſts principally in his office as magiſtrate; in which ſtation he has it in his power to render real ſervice to his country, in a juſt adminiſtration of the power the law has entruſted him with. This branch of duty, embraces every thing relative to peace and order, regulations relative to the public roads, and various other particulars; in which capacity, he is a moſt uſeful member of ſociety, when he attends to his great office with ſteadineſs and impartiality.

His private duty is of another kind. In ſome inſtances it is common with all mankind, as far as relates to ties of relationſhip. But, as a country gentleman, I conſider him, as an agent moving in a wider field. As the nature of his property creates dependants, whoſe happineſs and proſperity he has often the power of increaſing; and where he can do it without injury to himſelf, it clearly becomes a moral duty at leaſt, though he is not compelled to do it by law.

His firſt object is to guard againſt prejudice and improper bias; for if he once ſuffers that to take poſſeſſion of his mind, all his deciſions between one man and another, will create diſſatisfaction, inſtead of reverence and eſteem. But if he can eſtabliſh a character for impartiality, he may, like an equitable Chancellor, decide an hundred little controverſies between his inferior neighbours and tenants, which will often ſupercede vexatious appeals to the law.

He ſhould, alſo in ſome degree, conſider himſelf a truſtee for the public; and where it does not affect his own intereſt, he ſhould make ſuch a diſpoſition of his property, that it may diffuſe as much good to ſociety as poſſible.

He ſhould call forth and encourage induſtry; and where he exerciſes ſeverity, it ſhould be directed againſt indolence.

I do not however mean to imply, that it is incumbent on him to give away his eſtate; but to be ſtudious to put it under ſuch a courſe of management, that it may tend to ſerve others as well as himſelf. It is therefore a moſt laudable thing, when the lord of a great diſtrict adopts principles of this ſort, and looks out for proper objects of encouragement.

As a negative good quality, he will do well for his own peace of mind, not to be too tenacious of his game, and where he is obliged to inflict puniſhment for its protection, to do it with lenity and mildneſs, which will ſecure the object better than great ſeverity.

Farmers are undoubtedly the natural guardians of the game; and where they are treated by their landlords with confidence, they will always protect it much better than a game-keeper.

I have taken the liberty to give this laſt hint, as highly deſerving attention; for when a gentleman loſes himſelf upon this ground, he is conſidered as a man who loves power, and he ſeldom recovers the full confidence of the country, and therefore on that account cannot carry the weight in other meaſures which he would otherwiſe do, which is a great pity, becauſe

cauſe he naturally ſtands in a great ſtation, as he is one of the ſtrongeſt links in ſociety, between government and the lower orders of mankind; and he is a real bleſſing to the diſtrict where he lives, when he unites the three great characteriſtics of, a country gentleman, a good neighbour, and a good magiſtrate.

A WORD TO THE WISE.

THE great bugbears to Landed Property, are, Repairs, and Poor Rates. In many parts of England, they amount to more than half the value of an eſtate.

Repairs are in a great meaſure governed by cuſtom. An occupier of land, is entitled to neceſſary conveniences; but a landlord not only ſuffers himſelf to be impoſed upon, when he yields to improper indulgences, but ſets an example, that in other places operates againſt the good of his neighbour. In ſome particular counties, tenants are very unreaſonable in their demands of this ſort, therefore it behoves their landlords to be very ſteady in what they grant; and it ſhould be ſo contrived, that the tenant has ſome intereſt in the ſupport of his buildings, by being made to feel ſome proportion of their expence, which will make him the more careful to look after them.

The charge for the relief of the Poor is a more ſerious matter; as it is not only very heavy at preſent, but an increaſing burthen. Many ſenſible well-diſpoſed men, have exerciſed their pens upon this ſubject, and the legiſlature has endeavoured in vain to apply a remedy equal to the diſeaſe. I have not the preſumption to aim at laying down any fixed rules, for the eſtabliſhment of any new, or the amendment of any old law, for the better regulation of the poor; but ſimply adviſe the imitation and practice of a few private rules, which I flatter myſelf, in many local diſtricts, may be attended with advantage to the giver, and comfort to the receiver.

There are two principles, which ſhould be kept alive as much as poſſible, in the minds of the poor; pride, and ſhame: the former will lead them to the attainment of comfort, by honeſt means, and the latter will keep them from being burthenſome to their neighbours. But many of the modern plans for making proviſion for them, have tended to deſtroy theſe principles.

A man born to no inheritance, who aſſiduouſly devotes his whole life to labour, when nature declines, ought to be diſtinguiſhed from the lazy and profligate wretch, who has ſeldom worked but by force; one ought not to be crouded into the ſame habitation with the other. But in houſes of induſtry, there can be no diſtinction.

The ſocial clubs for mutual relief, which are prevalent in many parts of the Weſt of England, are highly commendable, and well worth the attention of the landed intereſt. If a little encouragement could be given to theſe laudable ſocieties, ſince they are now ſanctioned by law, it would tend very much to encourage the poor to ſtruggle with their difficulties; and it would be conſiſtent with ſound policy, as well as humanity, in the rich and opulent, to add little donations to the poor man's neſt egg on theſe occaſions. Earl Harcourt's example at Nuneham, in Oxfordſhire, is highly deſerving imitation; if a poor man puts a penny into the ſocial box, he puts in another; if a farmer or tradeſman contributes a ſhilling, he adds another; and by this means the poor rates are kept low, and the ſpirit of the peaſantry unbroken.

It is evident that the labourer who can keep a cow or a pig, is always a faithful ſervant to the farmer who employs him.

He has a ſtake in the common intereſt of the country, and is never prompt to riot in times of ſedition, like the man who has nothing to loſe; on the contrary, he is a ſtrong link in the chain of national ſecurity.

There are but few great farmers inclined to accommodate cottagers in the indulgence of a little land, and when they do let them any, it is generally at double the rent they give for it; but I am perſuaded, if there were a certain number of cottages, in proportion to the ſize of the eſtates, and they were accommodated with a couple of acres of land, to enable them to keep a cow, and rear two or three pigs, and theſe places were beſtowed as a reward to labourers of particular good conduct, it would do wonders towards the reduction of the rates, and the preſervation of order. I have been witneſs to ſeveral ſtriking proofs of this, in many labourers who have been thus favoured; who have ſhewn an attachment to their maſters truly exemplary. There cannot well be too many of theſe places attached to great farms.

There is another thing, which it is certainly incumbent on the occupiers of land to do; which is, to ſupply their own labourers with wheat at a moderate price, when the price in the market is high and oppreſſive to them. It is but reaſonable that the human ſervant ſhould fare as well as the animal ſervant; a farmer does not give his horſe a leſs quantity of oats becauſe they are dear, nor is it reaſonable that the ploughman or the threſher in the barn, ſhould have leſs for his penny, becauſe his maſter gets a great price. But I do not mean to ſay, this ſhould be extended to manufacturers, becauſe they are in general better paid than labourers in agriculture; and have not ſo immediate a claim upon the land, as the workmen in the vineyard.

If one other thing, in aid of what I have taken the liberty to ſuggeſt, could be eſtabliſhed, it would perhaps go near to remedy all grievances, and in a great meaſure ſet aſide the neceſſity of the poor laws; and this would be, the adoption of ſomething like Mr. Ackland's ſcheme of taxing labour for its own ſupport, by levying from the young and luſty, a penny to be put out upon accumulated intereſt, for the advantage of the old and decrepid. Age and infirmity would then dip its hand into the purſe it had helped to fill; honeſt pride would be preſerved; induſtry encouraged; and the latter part of a poor man's life would terminate in comfort.

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